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Any information you want about communicable diseases of domestic animals we will help you to get.

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The Secret of Health.

Don't worry.

Don't hurry. Too swift arrives as tardy as too slow.

Simplify! Simplify! Simplify!

Be regular. Be systematic. "Order is heaven's first law."

Don't overeat. Don't starve. "Let your moderation be known to all men."

Sleep and rest abundantly. Sleep is "nature's sweet restorer."

Court the fresh air day and night. Learn how to breathe. The "breath of life" is in the air.

Leave a margin of nervous energy for tomorrow. Don't spend faster than you make.

Be cheerful. "A light heart lives long."

Work like a man, but don't be worked to death.

Avoid passion and excitement. A moment's anger may cause lifelong misery.

"Seek peace and pursue it."

Think only healthful thoughts. "As a man thinketh in his heart so is he." Forget yourself in living for others.

Look for the good in everybody and everything. You will find what you habitually look for.

So live in body, soul and spirit that you will radiate health. Health is contagious, as well as disease.

Don't carry the whole earth on your shoulders, still less the universe. Trust the Eternal.

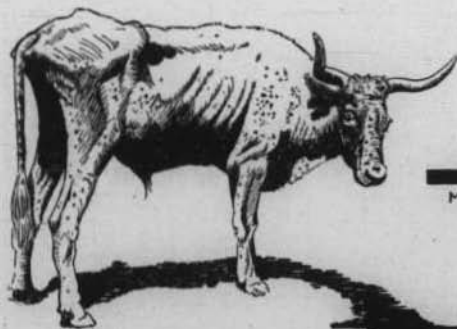
Finally—learn to wait in the "patience of hope."

"God is in His world."

"If ye know these things, happy are ye if ye do them."

—Exchange.

TO GET THE ANSWER. SUBTRACT THE TICK! —



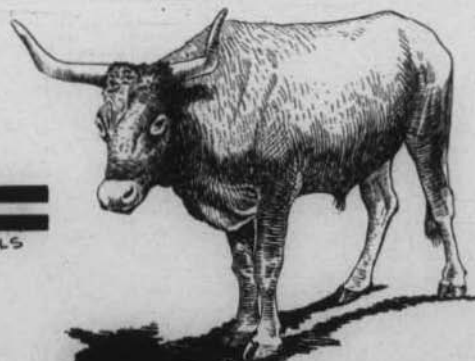
TICK-INFESTED STEER
WEIGHT 730 lbs.
AUG. 12, 1911.

—
MINUS



CATTLE TICK

==
EQUALS



SAME STEER.. MINUS TICKS
WEIGHT 1015 lbs.
OCT 12, 1911 —

THE SOUTH'S PROBLEM IN ARITHME (TICK) —

41632

7

1915

7

CALENDAR FOR 1913.

ECLIPSES.—Standard Time.

In the year 1913 there will be five Eclipses, three of the Sun and two of the Moon.

I.—A Total Eclipse of the Moon, March 22. Visible to Australia and the Pacific Ocean; the beginning visible to North America, western South America, and the eastern portion of Asia; the ending visible to western North America, central and eastern Asia.

II.—A Partial Eclipse of the Sun, April 6. Visible to the northwestern portion of North America, the extreme eastern part of Siberia and the Arctic Ocean.

III.—A Partial Eclipse of the Sun, August 31. Visible to Greenland and the eastern portion of the Maritime Provinces of Canada.

IV.—A Total Eclipse of the Moon, September 15. Visible to Australia and the Pacific Ocean; the beginning visible to North America except the northeast portion, the extreme northwest corner of South America and eastern Asia, the ending visible to the northwestern portion of North America and to Asia.

V.—A Partial Eclipse of the Sun, September 30. Visible to the southern end of Africa and the South Indian Ocean.

THE TWELVE SIGNS OF THE ZODIAC.



THE SEASONS.

		Eastern Time
Vernal Equinox (Spring begins).....	March 21 d. 0 h. 18 m. A. M.	
Summer Solstice (Summer begins).....	June 21 d. 8 h. 9 m. P. M.	
Autumnal Equinox (Autumn begins).....	Sept. 23 d. 10 h. 53 m. A. M.	
Winter Solstice (Winter begins),	Dec. 22 d. 5 h. 35 m. A. M.	

MORNING AND EVENING STARS.

Mercury (♿) will be Evening Star about March 11, July 7, and November 1; and Morning Star about April 24, August 22 and December 10.
Venus (♀) will be Evening Star till April 24; then Morning Star the rest of the year.
Jupiter (♃) will be Morning Star till July 5; then Evening Star the rest of the year.

ASTRONOMICAL CHARACTERS.

☉ Sun.	♃ Jupiter.	☾ Runs high.	♊ Ascending Node.	☾ Apog., far from ☉
☿ Earth.	♄ Saturn.	☾ Runs low.	♋ Descending Node.	☾ First Quarter.
♁ Mercury.	♅ Uranus.	☾ Opposition.	♌ Perigee, near ☉	☾ Full Moon.
♂ Venus.	♆ Neptune.	☾ Conjunction.		☾ Last Quarter.
♂ Mars.	♁ Moon.	☾ Quadrature.		☾ New Moon.

"A wise old gentleman whom I once knew had what he called a receipt for happy marriages: 'Mutual love, a sense of humor, and liking for the same books.'"
—Arlo Bates.

DIPHTHERIA.

Diphtheria used to be one of the most fatal of all diseases. It was the terror of childhood. Thirty years ago the appearance of diphtheria in the rural communities excited almost as much fear as the prediction that the world was coming to an end. And well it might, for the death roll from this disease was something awful. In Chicago, for example, during a fourteen-year period, from 1882 to 1895, the deaths from diphtheria numbered 136 for every hundred thousand people.

But that was before the days of antitoxin. Since that time antitoxin has been used. The fourteen years following its introduction the death rate from diphtheria in Chicago was only 36 per hundred thousand people. The death rate from this disease was reduced 73½ per cent.

Antitoxin is expensive to prepare. But those who are not able to pay for it can get it without cost. The State Board of Health has provided for it. Your family physician will explain it.

Don't forget that:

Diphtheria antitoxin cures diphtheria when given in the early stages of the disease.

One more *don't*:

If the baby has sore throat, *don't* treat it as a trivial matter but call the family doctor at once.

DIPHTHERIA CARRIERS.

Diphtheria is caused, so the bacteriologists tell us, by a tiny little vegetable organism, or germs—a little plant. This little plant gets into the throat of the well and there secretes or excretes a toxin or poison, which is absorbed by the patient, and that causes the disease.

They tell us also that some people have these little germs in their throats that do not have diphtheria. Such persons they call "diphtheria carriers." Some diphtheria carriers have had diphtheria, gotten well and still carry the germs. Others have the germs but have never had the disease.

These "carriers" they tell us may transmit diphtheria, even though they don't have it themselves.

They are therefore considered dangerous.

Then comes the tug of war. What to do with these "carrier cases," these people that have diphtheria germs in their throats, and still are not sick. Some say: "Quarantine 'em." Others say: "First catch your rabbit." For you must know that these carrier cases are walking the streets, riding in the cars, eating at the restaurants, and the only way you can tell one from anybody else is for a bacteriologist to get him under a microscope and then sometimes he is in doubt, and says "suspicious."

This is an awful predicament, but it really doesn't matter much how you settle the question. Some settle it one way and some another, and some don't settle it at all, but in the end it is all about the same.



MOON'S PHASES.									
BOSTON			NEW YORK			CHICAGO			
N.M.	D.	H. M.	D.	H. M.	D.	H. M.	D.	H. M.	
7	5	28 M.	7	5	28 M.	7	4	28 M.	
F. Q.	15	11 2 M.	15	11 2 M.	15	10 2 M.			
F. M.	22	10 40 M.	22	10 40 M.	22	9 40 M.			
L. Q.	29	2 34 M.	29	2 34 M.	29	1 34 M.			
D.	D.	Historical Events.			MOON'S SIGNS	LATITUDE			LATITUDE
M.	W.					Of Boston; New England, N. York State, So. Mich., Wisconsin, Iowa, Wyo. and Oregon.	SUN SLOW	Of New York City; Philadel'a, Conn., New Jersey, Pa., Ohio, Indiana, Illinois, Neb. and Cal.	
						Sun rises H. M.	Sun sets H. M.	Moon rises H. M.	
1	W	Circumcision			♈	7 30	4 38	1 48	4
2	Th	Port Arthur surrendered, 1905			♉	7 30	4 39	3 0	4
3	Fr	Postal Sav. Banks opened, 1911			♊	7 30	4 40	4 10	5
4	Sa	Senator S. B. Elkins died, 1911			♋	7 30	4 41	5 18	5
1. 2d Sunday after Christmas. Luke 2 9h. 12m. Day's Length, 9h. 22m.									
5	S	♈♈♈: ♂♂♈: ♂♂♈			♈	7 30	4 42	6 22	6
6	M	♈ Epiphany			♉	7 30	4 43	7 19	6
7	Tu	♈ 7th. Fenelon died, 1715			♊	7 30	4 44	sets	6
8	W	♈♈♈. Card. Satolli d., 1910			♋	7 29	4 45	5 48	7
9	Th	♈♈♈. Gen. Gordon d., 1904			♌	7 29	4 46	6 52	7
10	Fr	♈ in apogee			♍	7 29	4 47	7 56	8
11	Sa	♈♀♈: ♂ in ♈: ♂♈♈			♎	7 29	4 48	8 59	8
2. 1st Sunday after Epiphany. Luke 2 9h. 21m. Day's Length, 9h. 30m.									
12	S	Norvin Green died, 1893			♏	7 28	4 49	10 1	8
13	M	♈♈♈: ♈ in ♈			♐	7 28	4 50	11 2	9
14	Tu	♈ Adm. Barry retired, 1911			♑	7 28	4 51	morn	9
15	W	♈ 15th. ♂♂♈			♒	7 27	4 53	0 5	10
16	Th	Marshall Field died, 1906			♓	7 27	4 54	1 10	10
17	Fr	♈ gr. liberation E.			♈	7 26	4 55	2 20	10
18	Sa	♈♈♈ A. S. Hewitt d., 1903			♉	7 26	4 56	3 33	11
3. Septuagesima Sunday. Matt. 20 9h. 32m. Day's Length, 9h. 42m.									
19	S	Paul Morton died, 1911			♊	7 25	4 57	4 47	11
20	M	Chicago Crib Disaster, 1909			♋	7 24	4 59	5 58	11
21	Tu	♈♀ in aphelion: ♂♂♈			♌	7 24	5 0	6 59	11
22	W	♈ 22d. Victoria died, 1901			♍	7 23	5 1	rises	12
23	Th	♈♈♈: ♈ in perigee			♎	7 22	5 2	6 25	12
24	Fr	Sen. R. A. Alger died, 1907			♏	7 22	5 4	7 47	12
25	Sa	Conversion of St. Paul			♐	7 21	5 5	9 6	12
4. Sexagesima Sunday. Luke 8 9h. 45m. Day's Length, 9h. 54m.									
26	S	♈ in ♈. H. M. Field d., 1907			♑	7 21	5 6	10 23	13
27	M	James G. Blaine died, 1893			♒	7 20	5 7	11 37	13
28	Tu	♈ Flood in Paris, 1910			♓	7 18	5 9	morn	13
29	W	♈ 29th. ♀ stationary			♈	7 17	5 10	0 49	13
30	Th	Wm. Goebel assassinated, 1900			♉	7 16	5 11	2 1	13
31	Fr	Primero Mine Explosion, 1910			♊	7 15	5 13	3 11	14

Houseflies breed by preference in horse stables.
 Their second choice is the privy.
 Their third choice is damp garbage of any kind, even old rags.

AIR-SPACE AND VENTILATION.

Every healthy person should have at least 800 cubic feet of air-space, and every sick person at least 1,000 cubic feet. With this space provision should also be made for efficient ventilation, for if the air is to be kept sweet, 3,000 cubic feet per hour per head must be supplied. If this air be changed (as it will require to be if the cubic space allowed be less) by ventilation more often than three to four times an hour, an unbearable draught is created. This cubic air-space should be calculated after allowing for space occupied by furniture displacing air, and the larger the superficial area of the room the better. In sick rooms the floor-space should not be less than one-twelfth of the cubic space. A room 10x10x10 feet gives a breathing space of 1,000 cubic feet, without allowing for furniture.

The amount of cubic space thus assigned for healthy persons is far more than most people are able to have; in the crowded rooms of the artisan class, the average entire space would probably be more often 200 to 250 cubic feet per head than 800. In the case of soldiers, the amount of authorized regulation space (600 cubic feet) is below the standard now given.

HOG CHOLERA.

Hog cholera cannot be prevented. Neither can it be cured. Hog cholera serum is neither a curative nor a preventive.

But hog cholera serum, when properly administered, at the right time, prevents the loss of hogs. It does it this way:

When a hog has hog cholera he is afterward immune. That is, if he recovers. Now hog cholera serum, if given at the right time, helps him to recover.

The right time to give it is just as soon as possible after the disease gets into the herd. For, like fire in a forest, cholera sweeps through a herd taking them as it meets them. If serum is given at that time, before they get sick, they will have the disease just the same, but few will die. Afterwards they will be alive, because of the serum; they will be immune, because of the disease.

A man can save his hogs from hog cholera very easily if he will try, but he must first of all get down to work and learn how. For fuller information, write the State Board of Health.

If you suspect you have hookworms, it won't cost you anything to find out. Write the State Board of Health.



MOON'S PHASES.						MOON'S SIGNS	LATITUDE			SUN SLOW	LATITUDE		
BOSTON		NEW YORK		CHICAGO			Of Boston; New England, N. York State, So. Mich., Wisconsin, Iowa, Wyo. and Oregon.				Of New York City; Philadel ^a , Conn., New Jersey, Pa., Ohio, Indiana, Illinois, Neb. and Cal.		
D.	H. M.	D.	H. M.	D.	H. M.								
N. M.	6 0 22 M.	6 0 22 M.	5 11 22 A.										
F. Q.	14 3 34 M.	14 3 34 M.	14 2 34 M.										
F. M.	20 9 3 A.	20 9 3 A.	20 8 3 A.										
L. Q.	27 4 15 A.	27 4 15 A.	27 3 15 A.										
D. M.	D. W.	Historical Events.				SUN rises sets Moon rises			SUN rises sets Moon rises				
						H. M.	H. M.	H. M.		H. M.	H. M.	H. M.	

I	Sa	♂ ♀ ☾	Adm. Sperry d., 1911	☾	7	14	5	14	4	17	14	7	11	5	17	4	10
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5. Quinquagesima Sunday. Luke 18 10h. 2m. Day's Length, 10h. 9m.

2	S	☾	Purification—Candlemas	☾	7	13	5	15	5	16	14	7	10	5	19	5	9
3	M	♂ ♀ ☾	Geo. W. Childs d., 1894	☾	7	12	5	17	6	5	14	7	9	5	20	5	58
4	Tu	♂ ♀ ☾	Robt. Blair died, 1746	☾	7	11	5	18	6	44	14	7	8	5	21	6	38
5	W	♂ ♀ ☾	5th. Ash Wednesday	☾	7	10	5	19	sets		14	7	7	5	22	sets	
6	Th	☾	6th. Gen. Gibbon d. 1896	☾	7	9	5	20	5	48	14	7	6	5	24	5	52
7	Fr	☾	☾ in apogee	☾	7	8	5	22	6	51	14	7	5	5	25	6	53
8	Sa	☾	Gen. John R. Lewis died, 1900	☾	7	7	5	23	7	53	14	7	3	5	26	7	54

6. 1st Sunday in Lent. Matt. 4 10h. 19m. Day's Length, 10h. 25m.

9	S	☾	☾ in ☾. Gen. Hancock d., 1886	☾	7	5	5	24	8	54	14	7	2	5	27	8	54
10	M	♂ ♀ ☾	♂ gr. hel. lat. S.	☾	7	4	5	26	9	56	14	7	1	5	28	9	55
11	Tu	☾	Steamer Larchmont lost, 1907	☾	7	3	5	27	10	59	14	7	0	5	30	10	56
12	W	☾	☾ gr. elong. E. 46° 43'	☾	7	1	5	28	morn		14	6	59	5	31	morn	
13	Th	☾	☾ Capt. Cook killed, 1779	☾	7	0	5	30	0	5	14	6	57	5	32	0	1
14	Fr	☾	14th. St. Valentine's Day	☾	6	58	5	31	1	15	14	6	56	5	33	1	10
15	Sa	☾	Gen. Lew. Wallace died, 1905	☾	6	57	5	32	2	27	14	6	55	5	35	2	21

7. 2d Sunday in Lent. Matt. 15 10h. 37m. Day's Length, 10h. 43m.

16	S	☾	☾ Jay Cooke d., 1905	☾	6	56	5	33	3	38	14	6	53	5	36	3	31
17	M	☾	Frances E. Willard died, 1898	☾	6	55	5	35	4	42	14	6	52	5	37	4	35
18	Tu	☾	☾ Vermont admitted, 1791	☾	6	53	5	36	5	35	14	6	51	5	38	5	28
19	W	☾	Neill Burgess died, 1910	☾	6	52	5	37	6	18	14	6	49	5	39	6	13
20	Th	☾	☾ 20th. ☾ in perigee	☾	6	50	5	38	rises		14	6	48	5	41	rises	
21	Fr	☾	Edgar W. Nye died, 1896	☾	6	49	5	40	6	37	14	6	46	5	42	6	39
22	Sa	☾	☾ in ☾ Washington b., 1732	☾	6	47	5	41	7	56	14	6	45	5	43	7	56

8. 3d Sunday in Lent. Luke 11 10h. 56m. Day's Length, 11h. 0m.

23	S	☾	Panama Canal Treaty, 1904	☾	6	46	5	42	9	14	14	6	44	5	44	9	12
24	M	☾	St. Matthias	☾	6	44	5	43	10	31	13	6	42	5	45	10	28
25	Tu	☾	☾ D. B. Henderson d. 1906	☾	6	43	5	45	11	47	13	6	41	5	47	11	42
26	W	☾	☾ gr. libration W.	☾	6	41	5	46	morn		13	6	39	5	48	morn	
27	Th	☾	☾ 27th. N. Biddle d., 1844	☾	6	40	5	47	1	1	13	6	38	5	49	0	55
28	Fr	☾	Ladysmith relieved, 1900	☾	6	38	5	48	2	10	13	6	36	5	50	2	3

Lumber spent in building privies will never be needed for coffins.—Virginia Health Bulletin.

SMALLPOX.

Is the one absolutely preventable disease. Vaccination does it. If vaccination doesn't "take" try again till it does, and then you will be safe from smallpox.



This young lady believed in vaccination but waited for smallpox to "come around." It came so stealthily that she was the first in the community to get it. It was too late then.



MOON'S PHASES.										MOON'S SIGNS			LATITUDE Of Boston: New England, N. York State, So. Mich., Wisconsin, Iowa, Wyo. and Oregon.			LATITUDE Of New York City; Philadelphia, Conn., New Jersey, Pa., Ohio, Indiana, Illi- nois, Neb. and Cal.		
BOSTON			NEW YORK			CHICAGO												
N.M.	D. H. M.	A.	D. H. M.	A.	D. H. M.	A.	D. H. M.	A.	Sun rises	Sun sets	Moon rises	Sun rises	Sun sets	Moon rises				
F. Q.	15	3 58 A.	15	3 58 A.	15	2 58 A.			H. M.	H. M.	H. M.	H. M.	H. M.	H. M.				
F. M.	22	6 56 M.	22	6 56 M.	22	5 56 M.												
L. Q.	29	7 58 M.	29	7 58 M.	29	6 58 M.												
D. M.	D. W.	Historical Events.										Sun rises	Sun sets	Moon rises				
1	Sa	♂ in ♏. St. David										6 36	5 50	3 11				
9. 4th Sunday in Lent. John 6 11h. 16m. Day's Length, 11h. 19m.																		
2	S	♂♂. Gen. J. Early d., 1894										6 35	5 51	4 3				
3	M	♀ in perihelion										6 33	5 52	4 45				
4	Tu	♂♂. ♂♂										6 32	5 53	5 18				
5	W	General Strike in Philadel., 1910										6 30	5 54	5 45				
6	Th	♂ in perihelion; ♀ in apogee										6 28	5 56	6 8				
7	Fr	7th. E. Burritt d., 1879										6 27	5 57	sets				
8	Sa	H. W. Beecher died, 1887										6 25	5 58	6 46				
10. 5th Sunday in Lent. John 8 11h. 36m. Day's Length, 11h. 38m.																		
9	S	♂♂. ♀ in ♏										6 23	5 59	7 48				
10	M	Standard Oil Co. acquitted, 1909										6 21	6 0	8 51				
11	Tu	♂ gr. elong. E., 18° 19'; ♂♀										6 20	6 1	9 57				
12	W	John P. Altgeld died, 1902										6 18	6 3	11 5				
13	Th	♂♂. Ben. Harrison d., 1901										6 16	6 4	morn				
14	Fr	♂ gr. libration E.										6 15	6 5	0 15				
15	Sa	15th. Bruce crowned, 1306										6 13	6 6	1 24				
11. Palm Sunday. Matt. 27 11h. 56m. Day's Length, 11h. 57m.																		
16	S	Palm Sunday										6 11	6 7	2 29				
17	M	♂♀. ♀ stat. St. Patrick										6 9	6 8	3 26				
18	Tu	French Commune, 1871										6 8	6 10	4 11				
19	W	♀ gr. brilliancy										6 6	6 11	4 46				
20	Th	Crete blockaded, 1897										6 4	6 12	5 16				
21	Fr	Spring beg. Good Friday										6 3	6 13	5 42				
22	Sa	22d. ♀ in ♏										6 1	6 14	rises				
12. Easter Sunday. John 20 12h. 16m. Day's Length, 12h. 16m.																		
23	S	Easter Sunday										5 59	6 15	8 5				
24	M	Jules Verne died, 1905										5 57	6 16	9 23				
25	Tu	♀ gr. hel. lat. N. Annunciation										5 56	6 17	10 40				
26	W	Earthquake in Chilapa, 1908										5 54	6 18	11 54				
27	Th	♂♂ inferior										5 52	6 20	morn				
28	Fr	New York Riot, 1908										5 50	6 21	1 1				
29	Sa	29th. ♂♂										5 49	6 22	1 58				
13. Low Sunday. John 20 12h. 36m. Day's Length, 12h. 34m.																		
30	S	Alaska purchased, 1867										5 47	6 23	2 44				
31	M	♂♂. Hiram Berdan d., 1893										5 45	6 24	3 21				

If preventable, why not prevented?—King Edward VII.

PNEUMONIA.

February is one of the worst months for the worst disease, pneumonia. This kills more people every year than any other human disease, and is caused by a small organism similar in some respects to those causing other diseases with which we are familiar.

The germs of pneumonia get into the lungs through the mouth, but not every man who has the germs in his mouth will have pneumonia. If he did, practically all of us would have the disease during the winter. It is only when the system is "run down" that the germs do their dread work. These are the things which make pneumonia flourish:

1. Excessive drinking alcoholic liquors.
2. Unusual exposure to extreme weather.
3. Exposure of old persons or persons suffering from other diseases.

4. Living and sleeping in badly ventilated rooms.

To try to avoid it:

1. Do not drink alcoholic liquors.
2. Dress warmly but not too thickly.
3. Do not needlessly expose yourself.
4. Have abundant fresh air in your living and sleeping rooms.
5. Do not have your rooms too hot and then go into the open air unprotected by wraps.

6. If exposed to extreme or rough weather, and wet or numb, undress in a warm room, rub off with a rough towel until the skin glows, then go to bed and stay there several hours.

7. Avoid overeating and keep the bowels open.

8. Keep your feet warm and your head cool.

9. A moderate amount of brisk exercise in the out-door air daily.

—*Kansas State Board of Health.*

FRANKLIN AND THE BORE.

Once, in traveling, Dr. Franklin was exceedingly annoyed by a pedantic bore who forced himself upon him, and made a great parade of his learning. Franklin stood it as long as he could, and at length, looking at him gravely, said: "My friend, you and I know all that is to be known."

"How is that?" said the man, pleased with what he thought a complimentary association.

"Why," said the doctor, "you know everything except that you are a fool, and I know that."—*Pathfinder.*



MOON'S PHASES.													
BOSTON			NEW YORK			CHICAGO							
N.M.	D.	H. M.	N.M.	D.	H. M.	N.M.	D.	H. M.					
F. Q.	14	0 48 A.	14	0 39 M.	13	11 39 A.							
F. M.	20	4 33 A.	20	4 33 A.	20	3 33 A.							
L. Q.	28	1 9 M.	28	1 9 M.	28	0 9 M.							
D.	D.	Historical Events.					MOON'S SIGNS			LATITUDE			
M.	W.						Sun rises	Sun sets	Moon rises	SUN SLOW	Sun rises	Sun sets	Moon rises
							H. M.	H. M.	H. M.	M.	H. M.	H. M.	
1	Tu	Illinois Miners' Strike, 1910					♄	5 43	6 25	3 50	4	5 44	6 24
2	W	♂♂♂: ♄ in apogee					♄	5 42	6 26	4 14	4	5 43	6 25
3	Th	♀ stationary: ♄ stationary					♄	5 40	6 28	4 34	3	5 41	6 26
4	Fr	6ad Congress opened, 1911					♄	5 38	6 29	4 52	3	5 39	6 27
5	Sa	♂♂♄: ♄ in ♏					♄	5 36	6 30	5 10	3	5 38	6 28
14. 2d Sunday after Easter. John 10 12h. 56m. Day's Length, 12h. 53m.													
6	S	♂♂♂. ☐ ♃ ☉					♄	5 35	6 31	sets	3	5 36	6 29
7	M	P. T. Barnum died, 1891					♄	5 33	6 32	7 48	2	5 35	6 30
8	Tu	♂♀♄. T. F. Ryan d., 1910					♄	5 31	6 33	8 57	2	5 33	6 32
9	W	♂ in ♏: ♄ stationary					♄	5 30	6 34	10 6	2	5 31	6 33
10	Th	♂♂♄. T. L. Johnson d., 1911					♄	5 28	6 35	11 15	1	5 30	6 34
11	Fr	♄ gr. libration E.					♄	5 26	6 36	morn	1	5 28	6 35
12	Sa	Fire in Chelsea, 1908					♄	5 25	6 38	0 22	1	5 27	6 36
15. 3d Sunday after Easter. John 16 13h. 16m. Day's Length, 13h. 12m.													
13	S	♂♂♂. ☐ ♀ ☉					♄	5 23	6 39	1 20	1	5 25	6 37
14	M	14th. Sen. Butler d. 1909					♄	5 21	6 40	2 7	0	5 24	6 38
15	Tu	Bering Sea Treaty, 1896					♄	5 20	6 41	2 45	0	5 22	6 39
16	W	Mafeking relieved, 1900					♄	5 18	6 42	3 17	f.	5 20	6 40
17	Th	Sanford C. Hill died, 1871					♄	5 17	6 43	3 43	0	5 19	6 41
18	Fr	♄ in ♏: ♄ in perigee					♄	5 15	6 44	4 6	1	5 17	6 42
19	Sa	♂ in aphelion					♄	5 14	6 45	4 29	1	5 16	6 43
16. 4th Sunday after Easter. John 16 13h. 34m. Day's Length, 13h. 30m.													
20	S	20th. C. Darwin d., 1882					♄	5 12	6 46	rises	1	5 14	6 44
21	M	Mark Twain died, 1910					♄	5 10	6 48	8 12	1	5 13	6 45
22	Tu	Joseph Jefferson died, 1905					♄	5 9	6 49	9 31	1	5 11	6 46
23	W	♂ gr. hel. lat. S. St. George					♄	5 7	6 50	10 42	2	5 10	6 47
24	Th	♂♀☉ inferior					♄	5 6	6 51	11 45	2	5 9	6 48
25	Fr	St. Mark					♄	5 4	6 52	morn	2	5 7	6 49
26	Sa	♂♂♄. B. Björnson d., 1910					♄	5 3	6 53	0 37	2	5 6	6 50
17. Rogation Sunday. John 16 13h. 53m. Day's Length, 13h. 47m.													
27	S	♂♂♄					♄	5 1	6 54	1 18	2	5 4	6 51
28	M	28th. ☐ ☉ ☉					♄	5 0	6 55	1 51	2	5 3	6 52
29	Tu	Stuart Robson died, 1903					♄	4 59	6 56	2 17	3	5 2	6 53
30	W	♄ in apogee					♄	4 57	6 58	2 38	3	5 0	6 54

If all ownerless dogs were killed, there would be no more hydrophobia. Then valuable dogs and children would be safe. Let lovers of dogs, and of children, take note.

WHAT EVERY ONE SHOULD KNOW ABOUT HOOKWORMS.

1. The largest hookworm is only about three-fourths of an inch long—the male a little smaller.
2. The adult hookworms live in the alimentary tract in human beings.
3. They lay large numbers of eggs in the alimentary tract.
4. These eggs are passed out in the stools.
5. Where sewage is properly disposed of the eggs are destroyed and no harm is done.
6. But when no privy even is used the eggs are deposited on the ground where they hatch, and
7. In a few days the baby hookworms are ready to attack the feet of any barefoot child that chances to come along.
8. This they do by burrowing into the skin, producing what we know as ground itch.
9. They get through the skin into the circulation, through which they pass till they reach the lungs.
10. There they are coughed up and swallowed.
11. When they reach the intestines they grow up to be adult hookworms, and the child begins to get pale.
12. This child in turn begins to deposit hookworm eggs as the one before him did, and so on in an endless cycle.
13. If you suspect your child has hookworms write the State Board of Health.

COMMUNAL CRIME

The man who destroys the life of another, commits the highest of all crimes. The community or nation which, with the knowledge and means of prevention at hand, will permit the lives of thousands of its people to be blasted and destroyed by avoidable disease, is guilty of the same high crime. One may be due to criminal intent and the other to criminal negligence, but the result is the same.—*The Human Factor*.

The husband of a woman noted for her extravagance in dress had a terrible dream. He met a strange collection of animals—several foxes, a beaver and some seals—and they had no coats. He wondered, and then the beaver explained: "We were skinned for your wife's furs." The man smiled. "So was I," he said.—*Pathfinder*.



MOON'S PHASES.

	BOSTON	NEW YORK	CHICAGO
D. H. M.	D. H. M.	D. H. M.	D. H. M.
N.M.	6 3 24 M.	6 3 24 M.	6 2 24 M.
F. Q.	13 6 45 M.	13 6 45 M.	13 5 45 M.
F.M.	20 2 18 M.	20 2 18 M.	20 1 18 M.
L. Q.	27 7 4 A.	27 7 4 A.	27 6 4 A.

MOON'S SIGNS

LATITUDE
Of Boston; New
England, N. York
State, So. Mich.,
Wisconsin, Iowa,
Wyo. and Oregon.

LATITUDE
Of New York City;
Philadel'a, Conn.,
New Jersey, Pa.,
Ohio, Indiana, Illi-
nois, Neb. and Cal.

Historical Events.

D. M.	D. W.	
1 Th		Ascension. St. Philip. St. James
2 Fr		♂♂♂: ♀ in ♀
3 Sa		Farragut in New Orleans, 1862

Sun rises	Sun sets	Moon rises
H. M.	H. M.	H. M.
4 56	6 59	2 57
4 54	7 0	3 15
4 53	7 1	3 33

SUN FAST

Sun rises	Sun sets	Moon rises
H. M.	H. M.	H. M.
4 59	6 55	2 55
4 58	6 56	3 14
4 57	6 57	3 34

18. Sunday after Ascension. John 15-16 14h. 10m. Day's Length, 14h. 3m.

4 S	♂♂♂: ♂♀♂
5 M	♂ stationary
6 Tu	♂♂♂. Edward VII. d. 1910
7 W	♂♂♂
8 Th	♂♂♀. Dante born, 1265
9 Fr	♂ gr. hel. lat. S
10 Sa	Juarez surrendered, 1911

4 52	7 2	3 51
4 50	7 3	4 12
4 49	7 4	sets
4 48	7 5	9 6
4 47	7 6	10 14
4 46	7 8	11 15
4 44	7 9	morn

4 55	6 58	3 53
4 54	7 0	4 15
4 53	7 1	sets
4 52	7 2	9 0
4 51	7 3	10 7
4 49	7 4	11 8
4 48	7 5	11 59

19. Pentecost—Whit Sunday. John 14 14h. 27m. Day's Length, 14h. 19m.

11 S	♂♂♂. Pentecost Sunday
12 M	♂ stationary
13 Tu	♂♂♂ ♀ stationary
14 W	♂♂♂. Battle Crown Point, 1775
15 Th	♂ in perigee
16 Fr	♂ in ♀. L. Fairchild died, 1900
17 Sa	Lopez in Cuba, 1850

4 43	7 10	0 6
4 42	7 11	0 47
4 41	7 12	1 19
4 40	7 13	1 45
4 39	7 14	2 8
4 38	7 15	2 31
4 37	7 16	2 54

4 47	7 6	morn
4 46	7 7	0 41
4 45	7 8	1 15
4 44	7 9	1 42
4 43	7 10	2 7
4 42	7 11	2 31
4 41	7 11	2 56

20. Trinity Sunday. John 3 14h. 41m. Day's Length, 14h. 32m.

18 S	♂ in perihelion
19 M	Wm. E. Gladstone died, 1898
20 Tu	♂♂♂. ♀ in ♀
21 W	♂♂♂. A. Tourgee died, 1905
22 Th	♂♂♂. Corpus Christi. ♂ gr. lib. W. ♀
23 Fr	♂♂♂. L. Fairchild died, 1896
24 Sa	Queen Victoria born, 1819

4 36	7 17	3 18
4 35	7 18	3 45
4 34	7 19	rises
4 33	7 20	9 30
4 32	7 21	10 27
4 32	7 22	11 13
4 31	7 23	11 49

4 40	7 12	3 21
4 39	7 13	3 50
4 38	7 14	rises
4 37	7 15	9 23
4 36	7 16	10 20
4 36	7 17	11 6
4 36	7 18	11 43

21. 1st Sunday after Trinity. Luke 16 14h. 54m. Day's Length, 14h. 44m.

25 S	♂♂♂: ♀ in ♀
26 M	Steamer Pluviose sunk, 1910
27 Tu	♂♂♂. Dr. Koch d., 1910
28 W	♂ in ♀; ♀ in apogee
29 Th	♂♂♂: ♀ in ♀
30 Fr	♂ gr. brill. Decoration Day
31 Sa	♂♂♂: ♂♂♂

4 30	7 24	morn
4 29	7 25	0 18
4 28	7 26	0 41
4 28	7 26	1 1
4 27	7 27	1 20
4 27	7 28	1 37
4 26	7 29	1 55

4 35	7 19	morn
4 34	7 19	0 13
4 34	7 20	0 38
4 33	7 21	0 59
4 32	7 22	1 19
4 32	7 23	1 37
4 31	7 23	1 57

The campaign for better health has so far been little more or less than one large campaign for cleanliness.

From FLIES and FILTH to FOOD and FEVER

The State Board of Health of Florida

ASKS YOU to carefully and attentively read this card; **THEN**, put the question directly to yourself, whether flies should not be destroyed, or, at least, an effort be made to keep from polluting food prepared for you to eat.

Flies are disease carriers
Live and breed in all kinds of filth
Infect food and drink by germ-laden feet
Each female fly can lay 150 eggs
Should be kept out of dwellings

Flies breed on horse manure, cow dung, decaying vegetables, garbage of all description, dead animals and human excrement.

Flies are Nature's scavengers, it is true, filling the same function as some bacteria do, but become an intolerable nuisance and DANGER when entering human dwellings and contaminating food.

The presence of flies is a direct evidence of careless housekeeping and the existence of filth in some form about the premises.

Remember that when and where absolute cleanliness prevails there will be no flies.

Look daily after the garbage cans. See that they are carefully sprinkled with lime or kerosene oil and effectively covered.

Do the same thing to manure heaps, and remove all manure from stables every three or four days, and when removed, cover with lime and sand.

Look carefully after the Cupboards. They require constant attention. This is particularly true in hotels, boarding houses, Station houses, Railroad Stations, and, in fact, wherever people congregate in large numbers.

Flies are fond of feasting on tuberculous sputum, and hover around cupboards. The specks of flies contain live tubercle bacilli after they have eaten tuberculous sputum, showing that the bacilli will pass through the digestive tract of the fly in an active infective state.

Flies carry on their mouth (proboscis) and on their legs, spreading and deposit germs, on which they have recently fed, and then crawl over food, infecting it, unless shut out by screens.

Keep flies from the SICK, especially those ill with communicable or contagious diseases. If the room is not screened the patient should be treated under a net, both for safety to others as well as for individual comfort.

SCREEN ALL FOOD. Apply this rule, not only to food prepared at home, but to food stuffs offered for sale, and especially fruits, salads and all other things which do not require to be cooked. *For—*

Flies crawl over fruits when exposed for sale, safeguarded by screens, and the germs of people do not wash fruit before eating it. This is a fruitful source of human infection, particularly in a case of typhoid fever recently in being carelessly handled.

Don't forget that flies will carry the bacilli of typhoid fever from the stools of the patient (if left exposed and not disinfective), if given an opportunity, to the food in the kitchen and dining room. This is no conjecture, for the Spanish-American War proved this fact.

The great secret of how to get rid of flies is **CLEANLINESS, FIRST**, and by screening all openings of the house, especially the kitchen and dining room.

Look at the marginal illustrations. They are disgusting, it is true. So are flies. The disgust that your stomach receives through your eye is an antidote, however, to the probable and possible benefit which you will receive by giving due heed to the warnings suggested by the sketches.

STATE BOARD of HEALTH

E. M. HENDRY, President
Tampa, Florida

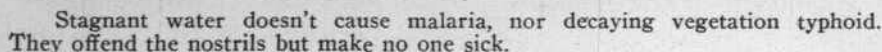
HARRY FOZZARD
Jacksonville, Florida

H. L. SIMPSON, M. D.
Pensacola, Florida

JOSEPH Y. PORTER, M. D.

Secretary and Executive Officer
KEY WEST and JACKSONVILLE, FLORIDA

Revised Circular No. 2, September



HOW FLIES TRANSMIT TYPHOID.

In two ways. The first and most important is as follows: Flies breed in privies. Flies bred in privies that have been used by typhoid patients get infected as maggots. They then excrete typhoid germs the rest of their lives. Fly-specks from such infected flies have typhoid germs in them. Such fly-specks deposited on food is one—probably the chief—way in which typhoid fever is spread in this State.

The other way is for flies to visit typhoid excreta and get the germs on their feet and mouths and then walk over food.

Fly-borne typhoid fever accordingly may be prevented by so disposing of typhoid excreta that flies can not get to it, either to lay eggs, or to feed.

All closets should be fly-proof.

DISEASES PREVENTED BY SCREENS.

1. Malaria, by keeping out the Anopheline mosquitoes.
 2. Filariasis, by keeping out the Culex mosquitoes.
 3. Yellow fever, by keeping out the Stegomyia calopus mosquitoes.
 4. Dengue (?), by keeping out the Culex fatigans mosquitoes.
 5. Sleeping sickness (in Africa), by keeping out the tsetse fly.
 6. Infantile paralysis (?), by keeping out the stable fly, *Stomyx calcitrans*.
 7. And by keeping out the housefly much of the typhoid, and bacillary dysentery is prevented.
 8. Much profanity is also prevented.
- If wire costs too much, cheesecloth does almost as well.

CONTAGION

Little George had heard a great deal said about disease germs, such as tuberculosis, etc. One day the family were at dinner, and George wanted a drink of water. The tired mother said:

"Drink out of your uncle's glass, George; he is through eating."

The little fellow commenced to cry, and said:

"I don't want to; I'm afraid I will catch the backache."—*Eustis Lake Region.*

I live in a constant endeavor to fence against the infirmities of ill-health and other evils, by mirth; I am persuaded that every time a man smiles—but much more when he laughs—it adds something to his fragment of life.—*Sterne.*



MOON'S PHASES.										LATITUDE					LATITUDE				
BOSTON			NEW YORK			CHICAGO			Of Boston; New England, N. York State, So. Mich., Wisconsin, Iowa, Wyo. and Oregon.					Of New York City; Philadel'a, Conn., New Jersey, Pa., Ohio, Indiana, Illi-nois, Neb. and Cal.					
N.M.	D.	H. M.	N.M.	D.	H. M.	N.M.	D.	H. M.	SUN SLOW					SUN SLOW					
F. Q.	4	0 6 M.	4	0 6 M.	3	11 6 A.													
F. M.	10	4 37 A.	10	4 37 A.	10	3 37 A.													
L. Q.	18	1 6 M.	18	1 6 M.	18	0 6 M.													
D. M.	26	4 59 M.	26	4 59 M.	26	3 59 M.													
Historical Events.										MOON'S SIGNS					SUN SLOW				
D. M.	D. W.									Sun rises	Sun sets	Moon rises	Sun SLOW	Sun rises	Sun sets	Moon rises			
H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.			
1	Tu	♂ ♀	John Hay died, 1905	♂ ♀	4 26	7 40	1 37	4	4 32	7 35	1 43	4	4 32	7 35	1 43	4			
2	W	♂ ♀	Pres. Garfield shot, 1881	♂ ♀	4 27	7 40	2 19	4	4 32	7 35	2 26	4	4 32	7 35	2 26	4			
3	Th	♂ ♀	♂ ♀ in aphelion	♂ ♀	4 27	7 40	3 14	4	4 33	7 34	3 21	4	4 33	7 34	3 21	4			
4	Fr	♂ ♀	4th. Independence Day	♂ ♀	4 28	7 40	sets	4	4 33	7 34	sets	4	4 33	7 34	sets	4			
5	Sa	♂ ♀	♂ ♀	♂ ♀	4 29	7 39	9 20	4	4 34	7 34	9 15	4	4 34	7 34	9 15	4			
27. 7th Sunday after Trinity. Mark 8 15h. 10m. Day's Length, 14h. 59m.																			
6	S	♂ ♀	♂ ♀ in perigee	♂ ♀	4 29	7 39	9 51	4	4 35	7 34	9 47	4	4 35	7 34	9 47	4			
7	M	♂ ♀	♂ gr. elong. E., 26° 13'	♂ ♀	4 29	7 39	10 17	5	4 36	7 33	10 15	5	4 36	7 33	10 15	5			
8	Tu	♂ ♀	John Morgan's Raid, 1863	♂ ♀	4 30	7 38	10 40	5	4 36	7 33	10 39	5	4 36	7 33	10 39	5			
9	W	♂ ♀	♂ ♀ in U. Lord Ripon d., 1909	♂ ♀	4 31	7 38	11 2	5	4 37	7 33	11 3	5	4 37	7 33	11 3	5			
10	Th	♂ ♀	10th. Columbus b., 1447	♂ ♀	4 32	7 38	11 24	5	4 38	7 32	11 26	5	4 38	7 32	11 26	5			
11	Fr	♂ ♀	Adm. Ammen died, 1898	♂ ♀	4 33	7 37	11 49	5	4 38	7 32	11 53	5	4 38	7 32	11 53	5			
12	Sa	♂ ♀	C. S. Rolls killed, 1910	♂ ♀	4 33	7 37	morn	5	4 39	7 32	morn	5	4 39	7 32	morn	5			
28. 8th Sunday after Trinity. Matt. 7 15h. 2m. Day's Length, 14h. 52m.																			
13	S	♂ ♀	Oscar Erbsloeh killed, 1910	♂ ♀	4 34	7 36	0 18	5	4 39	7 31	0 23	5	4 39	7 31	0 23	5			
14	M	♂ ♀	♂ gr. libration W.	♂ ♀	4 35	7 36	0 53	6	4 40	7 31	0 59	6	4 40	7 31	0 59	6			
15	Tu	♂ ♀	Cawnpore Massacre, 1857	♂ ♀	4 36	7 35	1 36	6	4 41	7 30	1 43	6	4 41	7 30	1 43	6			
16	W	♂ ♀	♂ ♀ in aphelion: ♂ ♀	♂ ♀	4 37	7 34	2 28	6	4 42	7 29	2 35	6	4 42	7 29	2 35	6			
17	Th	♂ ♀	Angelo Heilprin died, 1907	♂ ♀	4 38	7 34	3 29	6	4 42	7 29	3 36	6	4 42	7 29	3 36	6			
18	Fr	♂ ♀	18th. ♂ ♀: ♂ ♀	♂ ♀	4 38	7 33	rises	6	4 43	7 28	rises	6	4 43	7 28	rises	6			
19	Sa	♂ ♀	Battle of Winchester, 1864	♂ ♀	4 39	7 32	8 46	6	4 44	7 28	8 42	6	4 44	7 28	8 42	6			
29. 9th Sunday after Trinity. Luke 16 14h. 52m. Day's Length, 14h. 42m.																			
20	S	♂ ♀	♂ stationary	♂ ♀	4 40	7 32	9 8	6	4 45	7 27	9 5	6	4 45	7 27	9 5	6			
21	M	♂ ♀	♂ ♀ h. Bish. Potter died, 1908	♂ ♀	4 41	7 31	9 28	6	4 46	7 26	9 26	6	4 46	7 26	9 26	6			
22	Tu	♂ ♀	♂ in apogee	♂ ♀	4 42	7 30	9 46	6	4 47	7 25	9 45	6	4 47	7 25	9 45	6			
23	W	♂ ♀	♂ in Q. D. Lamont died, 1905	♂ ♀	4 43	7 29	10 3	6	4 47	7 24	10 4	6	4 47	7 24	10 4	6			
24	Th	♂ ♀	Gen. L. McLaws died, 1907	♂ ♀	4 44	7 28	10 21	6	4 48	7 24	10 23	6	4 48	7 24	10 23	6			
25	Fr	♂ ♀	♂ St. James	♂ ♀	4 45	7 27	10 40	6	4 49	7 23	10 43	6	4 49	7 23	10 43	6			
26	Sa	♂ ♀	26th. R. Fulton b., 1765	♂ ♀	4 46	7 26	11 3	6	4 50	7 22	11 7	6	4 50	7 22	11 7	6			
30. 10th Sunday after Trinity. Luke 19 14h. 38m. Day's Length, 14h. 30m.																			
27	S	♂ ♀	Sen. Edm. W. Pettus died, 1907	♂ ♀	4 47	7 25	11 32	6	4 51	7 21	11 37	6	4 51	7 21	11 37	6			
28	M	♂ ♀	♂ R. L. Collyer d., 1890	♂ ♀	4 48	7 24	morn	6	4 52	7 20	morn	6	4 52	7 20	morn	6			
29	Tu	♂ ♀	♂ ♂: ♂ ♀	♂ ♀	4 49	7 23	0 9	6	4 53	7 19	0 15	6	4 53	7 19	0 15	6			
30	W	♂ ♀	♂ Bismarck d., 1898	♂ ♀	4 50	7 22	0 57	6	4 54	7 18	1 4	6	4 54	7 18	1 4	6			
31	Th	♂ ♀	John G. Carlisle died, 1910	♂ ♀	4 51	7 21	1 59	6	4 55	7 17	2 6	6	4 55	7 17	2 6	6			

"What has your boy learned at school so far this term?"

"He has learned that he'll have to be vaccinated, that his eyes aren't really mates and that his method of breathing is entirely obsolete."—*The Pathfinder*.

TETANUS OR LOCKJAW.

A very fatal disease is tetanus, or lockjaw. A very insidious disease. You first find you have it, and then remember some wound you received a week or two before: Possibly a nail in the foot. A splinter in the finger. A slight wound from a blank cartridge while celebrating the Fourth of July.

For all of these have furnished their share of tetanus cases.

A few years ago it was shown that tetanus antitoxin would prevent tetanus, just as vaccination will prevent smallpox. But with this difference: that one vaccination will usually prevent smallpox for life, while one immunization against tetanus doesn't last very long.

There is one other important difference, one should get vaccinated against smallpox first opportunity, but not against tetanus till the suspected wound is received. In neither case should one wait till the disease asserts itself.

But tetanus antitoxin costs money and it takes a doctor to give it, and a doctor costs money.

Hence trivial wounds are generally disregarded, and this disregard is sometimes fatal. *Don't do it.*

Treat all wounds as though they were dangerous—some of them are, and we don't know which. The first injunction is:

Don't fool with blank cartridges, to get any wounds.

But if you do fool with them, and then get hurt, see a doctor—he will tell you whether you need antitoxin.

In 1903 some four hundred deaths in the United States were caused by Fourth of July accidents. Just think! That is as many deaths as occurred from smallpox last year, and both preventable, one by antitoxin, the other by vaccination.

If you can't pay for tetanus antitoxin, you can get it just the same—ask the family physician or druggist to tell you how.

Father was walking to Sunday-school with little Johnny and endeavoring to improve the time by teaching Johnny his Golden Text, the words of which were: "Whatsoever a man soweth that shall he also reap."

Johnny repeated it after his father several times and seemed to have mastered the correct wording. As they drew near the Sunday-school the father gave Johnny his last rehearsal. "Now, son," he said, "let's have the Golden Text once more without any help from me."

This is what he got from Johnny: "Whatsoever a man sews always rips."—*Harper's Basar.*



MOON'S PHASES.

	BOSTON	NEW YORK	CHICAGO
N.M.	2 7 58 M.	2 7 58 M.	2 6 58 M.
F. Q.	8 11 3 A.	8 11 3 A.	8 10 3 A.
F. M.	16 3 27 A.	16 3 27 A.	16 2 27 A.
L. Q.	24 7 18 A.	24 7 18 A.	24 6 18 A.
N.M.	31 3 38 A.	31 3 38 A.	31 2 38 A.

MOON'S SIGNS

LATITUDE
Of Boston; New
England, N. York
State, So. Mich.,
Wisconsin, Iowa,
Wyo. and Oregon.

LATITUDE
Of New York City;
Philadel'a, Conn.,
New Jersey, Pa.,
Ohio, Indiana, Illi-
nois, Neb. and Cal.

D.	D.	
M.	W.	Historical Events.

Sun	Sun	Moon
rises	sets	rises
H. M.	H. M.	H. M.

SUN
SLOW

Sun	Sun	Moon
rises	sets	rises
H. M.	H. M.	H. M.

1	Fr		4 52	7 20	3 13	6	4 56	7 16	3 19
2	Sa	ad.	4 53	7 19	sets	6	4 57	7 15	sets

31. 11th Sunday after Trinity. Luke 18 14h. 24m. Day's Length, 14h. 16m.

3	S	in perigee	4 54	7 18	8 18	6	4 58	7 14	8 15
4	M	inferior	4 55	7 16	8 43	6	4 59	7 13	8 42
5	Tu	gr. hel. lat. S. in	4 56	7 15	9 6	6	5 0	7 12	9 6
6	W	Wm. Kemmler executed, 1890	4 57	7 14	9 28	6	5 1	7 10	9 30
7	Th	Gen. Miles retired, 1903	4 58	7 13	9 52	6	5 2	7 9	9 55
8	Fr	8th. Sen. Frye d., 1911	4 59	7 11	10 19	6	5 2	7 8	10 24
9	Sa	John W. Gates died, 1911	5 0	7 10	10 53	5	5 3	7 7	10 59

32. 12th Sunday after Trinity. Mark 7 14h. 8m. Day's Length, 14h. 1m.

10	S	gr. libration W.	5 1	7 9	11 34	5	5 4	7 5	11 41
11	M	Lopez in Cuba, 1857	5 2	7 7	morn	5	5 5	7 4	morn
12	Tu		5 3	7 6	0 23	5	5 6	7 3	0 30
13	W	stationary	5 4	7 4	1 20	5	5 7	7 1	1 27
14	Th	C. P. Huntington died, 1900	5 5	7 3	2 24	5	5 8	7 0	2 30
15	Fr		5 6	7 2	3 31	4	5 9	6 59	3 36
16	Sa	10th. J. J. Ingalls d., 1900	5 7	7 0	rises	4	5 10	6 57	rises

33. 13th Sunday after Trinity. Luke 10 13h. 51m. Day's Length, 13h. 45m.

17	S	Railway Strike in England, 1911	5 8	6 59	7 33	4	5 11	6 56	7 31
18	M	Admiral Evans retired, 1908	5 10	6 57	7 50	4	5 12	6 54	7 49
19	Tu	in : in apogee	5 11	6 56	8 8	4	5 13	6 53	8 8
20	W	Tsing Tau Mine Disaster, 1907	5 12	6 54	8 26	3	5 14	6 51	8 27
21	Th	Gen. Franz Sigel died, 1902	5 13	6 53	8 45	3	5 15	6 50	8 48
22	Fr	gr. elong. W., 18° 26'	5 14	6 51	9 6	3	5 16	6 48	9 10
23	Sa	Commodore Perry died, 1820	5 15	6 50	9 31	3	5 17	6 47	9 36

34. 14th Sunday after Trinity. Luke 17 13h. 32m. Day's Length, 13h. 27m.

24	S	24th. St. Bartholomew	5 16	6 48	10 4	2	5 18	6 45	10 10
25	M	gr. libration E.	5 17	6 46	10 47	2	5 19	6 44	10 54
26	Tu		5 18	6 45	11 41	2	5 20	6 42	11 49
27	W	Storm at Charleston, 1911	5 19	6 43	morn	1	5 21	6 41	morn
28	Th		5 20	6 41	0 47	1	5 22	6 39	0 54
29	Fr	in perihelion:	5 21	6 40	2 4	1	5 23	6 38	2 10
30	Sa	31st.	5 22	6 38	3 27	1	5 24	6 36	3 31

35. 15th Sunday after Trinity. Matt. 6 13h. 14m. Day's Length 13h. 10m.

31	S	George Wm. Curtis died, 1892	5 23	6 37	sets	0	5 25	6 35	sets
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Health is the state of not knowing you have it.

INTERMEDIATE HOSTS.

A person suffering from diphtheria is constantly giving off diphtheria germs. If these germs, by any accident, get transferred to the mouth of a healthy child they are likely to set up another case of diphtheria. Hence it is dangerous for well children to associate with one that has diphtheria. The same is true of measles, whooping cough, scarlatina, mumps, chickenpox. It is also dangerous to associate with smallpox cases unless one is vaccinated. In that event one is safe against smallpox, no matter who he associates with.

These diseases are all transmitted directly from person to person.

But there is another class of diseases in which the parasite has two hosts—one when it is a baby parasite, and another when it is grown up. The malarial parasite for example. It spends its babyhood, if it may be spoken of as such, in the human being, but its adult life is passed in the mosquito.

When a parasite has to have two hosts, one is called the definitive and the other the intermediate host.

The diseases in which the parasite requires two hosts are not transmitted from person to person. That is why one could sleep in the bed with a case of yellow fever, or malaria with perfect safety—*provided* the mosquito host is excluded.

SEWAGE BORNE DISEASES:

Typhoid fever,
Asiatic cholera,
Bacillary dysentery,
Amoebic dysentery,
Hookworms,
Cochin-China diarrhoea,
Several forms of tape worms,
And many diarrhoeas:

all of which will be prevented by the proper disposal of sewage.

Little by little the realization is growing that it is the living environment of man which brings disease to him. The inanimate disease carrier is daily becoming less of a bugaboo, and the human, the animal, and the insect germ vehicles are coming to be recognized as the great disseminators of suffering and death.—*Rucker*.



MOON'S PHASES.

	BOSTON			NEW YORK			CHICAGO		
	D.	H.	M.	D.	H.	M.	D.	H.	M.
F. Q.	7	8	6 M.	7	8	6 M.	7	7	6 M.
F. M.	15	7	46 M.	15	7	46 M.	15	6	46 M.
L. Q.	23	7	30 M.	23	7	30 M.	23	6	30 M.
N. M.	29	11	57 A.	29	11	57 A.	29	10	57 A.

D.	D.	
M.	W.	Historical Events.

1	M	☾ in ♊: ☾ in perigee
2	Tu	Napoleon III. surrendered, 1870
3	W	2d Eruption of Mt. Pelee, 1902
4	Th	☾ stationary
5	Fr	Portsmouth Treaty signed, 1905
6	Sa	Pres. McKinley shot, 1901

MOON'S SIGNS

Sun rises	Sun sets	Moon sets
H. M.	H. M.	H. M.
5 24	6 35	7 16
5 25	6 33	7 30
5 26	6 31	7 54
5 27	6 30	8 21
5 29	6 28	8 53
5 30	6 26	9 32

LATITUDE
Of Boston; New England, N. York State, So. Mich., Wisconsin, Iowa, Wyo. and Oregon.

LATITUDE
Of New York City; Philadel'a, Conn., New Jersey, Pa., Ohio, Indiana, Illinois, Neb. and Cal.

SUN EAST

Sun rises	Sun sets	Moon sets
H. M.	H. M.	H. M.
5 26	6 33	7 16
5 27	6 31	7 31
5 28	6 30	7 57
5 29	6 28	8 25
5 30	6 26	8 59
5 31	6 25	9 39

36. 16th Sunday after Trinity. Luke 7 12h. 53m. Day's Length, 12h. 51m.

7	S	☾ 7th. ☾ gr. libration W.	5 31	6 24	10 19	2	5 32	6 23	10 26
8	M	☾ gr. hel. lat. N.	5 32	6 23	11 14	2	5 33	6 22	11 21
9	Tu	☾ ☽. Gen. M'Cook d., 1909	5 33	6 21	morn	3	5 34	6 20	morn
10	W	☾ ☽. Perry's Victory, 1813	5 34	6 19	0 16	3	5 35	6 18	0 23
11	Th	☾ in ♊: ☽ ☽	5 35	6 18	1 22	3	5 36	6 16	1 28
12	Fr	Cornelius Vanderbilt died, 1899	5 36	6 16	2 28	4	5 37	6 15	2 33
13	Sa	U. S. Constitution ratified, 1788	5 37	6 14	3 33	4	5 38	6 13	3 36

37. 17th Sunday after Trinity. Luke 14 12h. 34m. Day's Length, 12h. 33m.

14	S	☾ Pres. McKinley died, 1901	5 38	6 12	4 36	4	5 39	6 12	4 38
15	M	☾ 15th. ☾ in apogee	5 39	6 11	rises	5	5 40	6 10	rises
16	Tu	☾ ☽ ☽ superior	5 40	6 9	6 32	5	5 41	6 8	6 33
17	W	Mt. Ceniz Tunnel opened, 1871	5 41	6 7	6 50	5	5 42	6 7	6 52
18	Th	☽ in ♊. Delhi taken, 1857	5 42	6 5	7 10	6	5 43	6 5	7 13
19	Fr	Pres. Garfield died, 1881	5 43	6 3	7 34	6	5 44	6 3	7 39
20	Sa	Steamer Olympic Collision, 1911	5 44	6 2	8 4	7	5 45	6 1	8 10

38. 18th Sunday after Trinity. Matt. 23 12h. 14m. Day's Length, 12h. 14m.

21	S	St. Matthew	5 46	6 0	8 41	7	5 46	6 0	8 48
22	M	☽ ☽. Robt. Hoe died, 1909	5 47	5 58	9 29	7	5 47	5 58	9 37
23	Tu	☽ 23d. Autumn begins	5 48	5 56	10 29	8	5 48	5 56	10 36
24	W	☽ P. S. Gilmore died, 1892	5 49	5 55	11 40	8	5 49	5 55	11 46
25	Th	☽ ☽. J. M. Palmer d., 1900	5 50	5 53	morn	8	5 50	5 53	morn
26	Fr	Lafcadio Hearn died, 1904	5 51	5 51	0 58	9	5 51	5 51	1 3
27	Sa	☽ ☽. Geo. Chavez d., 1910	5 52	5 49	2 19	9	5 52	5 50	2 23

39. 19th Sunday after Trinity. Matt. 9 11h. 55m. Day's Length 11h. 55m.

28	S	Thos. F. Bayard died, 1898	5 53	5 48	3 40	9	5 53	5 48	3 42
29	M	☽ 29th. ☽ in per. St. Michael	5 54	5 46	5 1	10	5 54	5 46	5 1
30	Tu	☽ ☽ stationary: ☽ ☽	5 55	5 44	sets	10	5 55	5 45	sets

A ticky cow is a sick cow. She has chronic Texas fever. Wouldn't you rather drink milk from a healthy one?

HEAT EXHAUSTION.

Though this condition is caused and prevented in the same way as sunstroke, it is really quite different from it. Heat exhaustion is just what its name states—exhaustion or collapse due to excessive heat.

Symptoms:

Great depression and weakness.

No unconsciousness.

Face pale and covered with clammy sweat.

Breathing shallow.

Pulse weak and rapid.

Treatment:

Send for doctor.

Remove to cool place and have patient lie down in most comfortable position with clothing loosened.

No cold externally, but may sip cold water.

Stimulants, as tea, coffee, aromatic spirits of ammonia or small amount of brandy or whiskey with a good deal of water.

WE SHOULD THINK SO.

Here are some of the things your child should be able to do when he is seven years old, according to standards laid down by scientists at the hygienic congress at Washington:

Count to 13, touching an object representing each progressive number as he counts.

Repeat the days of the week.

Make change in simple sums.

Recognize the principal colors.

Tell time.

Pick out missing details in pictures.

Draw in the missing details.

If he can't do all these things, he is retarded in the development for which each act, according to psychologists, is an expression. In that case special care should be given to his diet, play, study and general bringing-up, and he should not be forced to compete with normal children.—*Pathfinder*.

Weeds have more to do with the health of the community than flowers, but people who cultivate weeds instead of flowers cultivate things that make for sickness instead of health.



MOON'S PHASES.

	BOSTON	NEW YORK	CHICAGO
F. Q.	D. H. M. 6 8 46 A.	D. H. M. 6 8 46 A.	D. H. M. 6 7 46 A.
F. M.	15 1 7 M.	15 1 7 M.	15 0 7 M.
L. Q.	22 5 53 A.	22 5 53 A.	22 4 53 A.
N. M.	29 9 29 M.	29 9 29 M.	29 8 29 M.

LATITUDE

Of Boston: New England, N. York State, So. Mich., Wisconsin, Iowa, Wyo. and Oregon.

LATITUDE

Of New York City; Philadel'a, Conn., New Jersey, Pa., Ohio, Indiana, Illinois, Neb. and Cal.

MOON'S SIGNS

Sun rises H. M. H. M. Moon sets H. M.

SUN EAST

Sun rises H. M. H. M. Moon sets H. M.

Historical Events.

1	W	Postal Special Delivery, 1885	5 56	5 43	6 18	10	5 56	5 43	6 21
2	Th	8 in U: ☐☐☐: ☐☐☐	5 58	5 41	6 49	11	5 57	5 41	6 54
3	Fr	Revolution in Portugal, 1910	5 59	5 39	7 26	11	5 58	5 40	7 32
4	Sa	Tripoli bombarded, 1911	6 0	5 37	8 11	11	5 59	5 38	8 18

40. 20th Sunday after Trinity. Matt. 22 11h. 35m. Day's Length, 11h. 37m.

5	S	☾ gr. libration W.	6 1	5 36	9 6	11	6 0	5 37	9 14
6	M	6th. ☽☽☽	6 2	5 34	10 8	12	6 1	5 35	10 15
7	Tu	Oliver W. Holmes died, 1894	6 3	5 32	11 14	12	6 2	5 33	11 20
8	W	☽☽☽. Chicago Fire, 1871	6 4	5 31	morn	12	6 3	5 32	morn
9	Th	Cornelius N. Bliss died, 1911	6 5	5 29	0 20	13	6 4	5 30	0 25
10	Fr	Justice Hughes installed, 1910	6 7	5 27	1 25	13	6 5	5 28	1 29
11	Sa	Great Strike in Paris, 1910	6 8	5 25	2 28	13	6 6	5 27	2 31

41. 21st Sunday after Trinity. John 4 11h. 15m. Day's Length, 11h. 18m.

12	S	☾ in apogee: ☽ in aphelion	6 9	5 24	3 30	13	6 7	5 25	3 31
13	M	☽ stationary	6 10	5 22	4 31	14	6 8	5 24	4 31
14	Tu	☽ in perihelion	6 11	5 21	5 33	14	6 9	5 22	5 32
15	W	15th. Sen. Dolliver d. 1910	6 13	5 19	rises	14	6 11	5 21	rises
16	Th	Taft and Diaz met, 1910	6 14	5 17	5 39	14	6 12	5 19	5 43
17	Fr	Julia Ward Howe died, 1910	6 15	5 16	6 7	15	6 13	5 18	6 12
18	Sa	St. Luke, Evangelist.	6 16	5 14	6 42	15	6 14	5 16	6 48

42. 22d Sunday after Trinity. Matt. 18 10h. 56m. Day's Length, 11h. 0m.

19	S	☽☽☽. Eug. Ely killed, 1911	6 17	5 13	7 26	15	6 15	5 15	7 33
20	M	David B. Hill died, 1910	6 18	5 11	8 21	15	6 16	5 13	8 28
21	Tu	☽☽☽	6 19	5 10	9 27	15	6 17	5 12	9 34
22	W	22d. ☐☐☐: ☐☐☐	6 21	5 8	10 40	15	6 18	5 10	10 46
23	Th	John R. Walsh died, 1911	6 22	5 7	11 57	16	6 19	5 9	morn
24	Fr	Judge R. W. Peckham d., 1909	6 23	5 5	morn	16	6 20	5 8	0 1
25	Sa	Grant Allen died, 1895	6 24	5 4	1 15	16	6 22	5 6	1 18

43. 23d Sunday after Trinity. Matt. 22 10h. 37m. Day's Length, 10h. 42m.

26	S	☾ in U. Gen. Howard d., 1909	6 25	5 2	2 33	16	6 23	5 5	2 34
27	M	☐☐☐: ☐☐☐: ☐ in perigee	6 26	5 1	3 51	16	6 24	5 3	3 51
28	Tu	St. Simon and St. Jude.	6 28	5 0	5 10	16	6 25	5 2	5 8
29	W	29th. Jos. Pulitzer d. 1911	6 29	4 58	sets	16	6 26	5 1	sets
30	Th	China grants Const. Gov't, 1911	6 30	4 57	5 18	16	6 27	5 0	5 24
31	Fr	☽☽☽: ☐ stat. Hallowe'en	6 32	4 55	6 0	16	6 29	4 58	6 7

It takes two things to produce diphtheria—the diphtheria germ, and susceptibility to the disease.

SOME OF HUMANITY'S NEEDLESS BURDENS.

From an address by E. E. Rittenhouse.

With all its blessings modern civilization has introduced hazards, habits and conditions of life which not only invite but which have increased in many ways physical, mental and moral degeneracy.

Our birth rate is declining. Of over 20,000,000 school children in this country, not less than 75 per cent need attention for physical defects which are prejudicial to health.

The alcohol and drug habits are constantly adding to the degenerate list and the death roll.

The diseases of vice are spreading and we lack the moral courage to openly war against them.

Insanity and idiocy are increasing at an alarming rate.

Suicides now reach the enormous total of 15,000 annually.

Attempts upon human life by individuals and mobs under trifling provocation, or none at all, are obviously increasing.

Over 9,000 murders are committed every year in the United States. Only about 116 murderers are executed for these crimes.

Our homicide rate is appalling—about 100 per million population, against 13 in Canada, 9 in Great Britain, 15 in Italy.

The diseases of old age are reaching down into middle life and below. Our vital organs are wearing out too soon.

We have had an increase of over 100 per cent in 30 years in the death rate from diseases of the heart, blood vessels and kidneys, including apoplexy.

These diseases claim over 350,000 Americans annually. Sixty per cent of them are preventable or postponable if detected in time.

* * * * *

Cancer destroys nearly 75,000 lives annually. The loss from external cancer alone has increased 52 per cent in ten years.

Pellagra, a deadly plague, is increasing in the South, but it excites little or no public concern.

Over 135,000 lives are taken by pneumonia, chiefly as a result of weakened resistance from degenerative disease.

Over 150,000 die annually from the preventable plague, tuberculosis.

Nearly a million tubercular victims are constantly spreading the malady to the well, with virtually no official supervision or restraint.

Over 25,000 are killed and 300,000 attacked annually by the preventable filth disease, typhoid fever.

Other germ diseases carry off more people than tuberculosis and typhoid fever.

(Continued on page 27.)



MOON'S PHASES.

	BOSTON	NEW YORK	CHICAGO
F. Q.	D. H. M.	D. H. M.	D. H. M.
F. M.	5 1 34 A.	5 1 34 A.	5 0 34 A.
L. Q.	13 6 11 A.	13 6 11 A.	13 5 11 A.
N. M.	21 2 56 M.	21 2 56 M.	21 1 56 M.
N. M.	27 8 41 A.	27 8 41 A.	27 7 41 A.

MOON'S SIGNS

LATITUDE
Of Boston; New
England, N. York
State, So. Mich.,
Wisconsin, Iowa,
Wyo. and Oregon.

LATITUDE
Of New York City;
Philadel'a, Conn.,
New Jersey, Pa.,
Ohio, Indiana, Illi-
nois, Neb. and Cal.

Historical Events:

D.	D.		SUN RISES	SUN SETS	MOON SETS	SUN FAST	SUN RISES	SUN SETS	MOON SETS
M.	W.		H. M.	H. M.	H. M.	M.	H. M.	H. M.	H. M.
1	Sa	All Saints' Day	6 33	4 54	6 52	16	6 30	4 57	6 59
44.		24th Sunday after Trinity. Matt. 9	10h. 18m.	Day's Length, 10h. 25m.					
2	S	♄ gr. libration W.	6 34	4 52	7 52	16	6 31	4 56	7 59
3	M	♄♂♂. Shanghai capt'd, 1911	6 35	4 52	8 58	16	6 32	4 55	9 4
4	Tu	♄♂♂	6 36	4 50	10 6	16	6 33	4 54	10 11
5	W	♄ 5th. ♀ gr. hel. lat. N.	6 38	4 49	11 13	16	6 35	4 52	11 17
6	Th	Benj. Harrison elected, 1888	6 39	4 48	morn	16	6 36	4 51	morn
7	Fr	Pensacola taken, 1814	6 40	4 47	0 18	16	6 37	4 50	0 21
8	Sa	♄ in ♄: ♄ in apogee	6 42	4 46	1 20	16	6 38	4 49	1 22
45.		25th Sunday after Trinity. John 2	10h. 2m.	Day's Length, 10h. 9m.					
9	S	E. W. Carmack died, 1908	6 43	4 45	2 21	16	6 39	4 48	2 21
10	M	Massacre at Nanking, 1911	6 44	4 44	3 22	16	6 41	4 47	3 21
11	Tu	Gen. Wool died, 1869	6 45	4 42	4 24	16	6 42	4 46	4 22
12	W	♄ stationary	6 47	4 41	5 28	16	6 43	4 45	5 25
13	Th	♄ 13th. Sen. Clay d., 1910	6 48	4 40	6 34	16	6 44	4 44	6 29
14	Fr	La Seine sunk, 1909	6 49	4 40	rises	16	6 45	4 43	rises
15	Sa	♄♂♂. N. M. Fish died, 1902	6 51	4 39	5 25	15	6 46	4 43	5 32
46.		26th Sunday after Trinity. Matt. 8	9h. 46m.	Day's Length, 9h. 54m.					
16	S	♄ gr. libration E.	6 52	4 38	6 16	15	6 48	4 42	6 23
17	M	Ralph Johnstone killed, 1910	6 53	4 37	7 19	15	6 49	4 41	7 26
18	Tu	♄♂♂: ♄♂♂	6 54	4 36	8 30	15	6 50	4 40	8 36
19	W	Tweed convicted, 1873	6 55	4 35	9 45	15	6 51	4 40	9 50
20	Th	♄ in ♄	6 57	4 35	11 1	14	6 53	4 39	11 4
21	Fr	♄ 21st. G. A. Hebart d. 1899	6 58	4 34	morn	14	6 54	4 38	morn
22	Sa	♄ in ♄. Thurlow Weed d., 1892	6 59	4 33	0 17	14	6 55	4 38	0 19
47.		27th Sunday after Trinity. John 6	9h. 33m.	Day's Length, 9h. 41m.					
23	S	♄♂♂ inferior	7 0	4 33	1 32	14	6 56	4 37	1 32
24	M	♄ in perigee	7 2	4 32	2 48	13	6 57	4 37	2 47
25	Tu	♄ in perihelion	7 3	4 32	4 6	13	6 58	4 36	4 3
26	W	♄♂♂	7 4	4 31	5 25	13	6 59	4 36	5 21
27	Th	♄ 27th Thanksgiving Day	7 5	4 31	6 45	12	7 0	4 35	6 39
28	Fr	Joseph Parker died, 1902	7 6	4 30	sets	12	7 1	4 35	sets
29	Sa	Ohio admitted, 1802	7 7	4 30	5 35	12	7 2	4 35	5 42
48.		1st Sunday in Advent. Matt 21	9h. 21m.	Day's Length 9h. 31m.					
30	S	♄♂♂. St. Andrew	7 8	4 29	6 39	11	7 3	4 34	6 46

It takes two things to produce smallpox—the smallpox virus, which no one has but smallpox patients, and susceptibility to the disease, which everybody has except the vaccinated.

Over 90,000 Americans are killed annually by accident and other violence, and the loss is steadily increasing.

Over 1,500,000 people are constantly ill from preventable disease.

Over six million people will die from preventable cause during the next ten years at the present loss rate.

The sum of \$1,500,000 is a low estimate of the annual economic loss from preventable deaths.

Our cities spent six and a half times as much to prevent fire-waste, although the money loss from life-waste is six times greater.

WHAT WE DON'T KNOW ABOUT PELLAGRA.

We don't know its cause, whether due to eating spoiled corn, or rancid fat, or something else—

Don't know whether it is transmitted by sandflies, by contact or some other way—

Don't know whether it is a new disease in this country, or an old one;

If we have it, don't know when we got it, or when we'll get well.

In fine, we don't know how to keep from getting it, or what to do for it when we do get it.

INFANTILE PARALYSIS.

Dr. M. J. Rosenau, of Harvard, has transmitted infantile paralysis from monkey to monkey by means of the bite of the stable fly, the *Stomoxys calcitrans*. He reported this at the XVth International Congress of Hygiene and Demography but his report was received with caution.

Since then, however, Dr. Anderson of the Public Health Service has repeated his experiments with similar results.

There is, therefore, a strong inclination to think this is the way that dread disease is transmitted.

The stable fly looks so much like the house fly that about the only way an amateur can tell them apart is by the fact that the stable fly bites, while the house fly does not.

"Tie a piece of lemon to your corn every night for five nights and it will come off," says a "hint" in one of the papers. Yes, the lemon will come off.—*Pathfinder*.



MOON'S PHASES.

	BOSTON D. H. M.	NEW YORK D. H. M.	CHICAGO D. H. M.
F. O.	5 9 59 M.	5 9 59 M.	5 8 59 M.
F. M.	13 10 0 M.	13 10 0 M.	13 0 0 M.
L. Q.	20 11 16 M.	20 11 16 M.	20 10 16 M.
N. M.	27 9 59 M.	27 9 59 M.	27 8 59 M.

MOON'S SIGNS

LATITUDE
Of Boston; New
England, N. York
State, So. Mich.,
Wisconsin, Iowa,
Wyo. and Oregon.

LATITUDE
Of New York City;
Philadel'a, Conn.,
New Jersey, Pa.,
Ohio, Indiana, Illi-
nois, Neb. and Cal.

D. M.	D. W.	Historical Events.
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1 M	McNamara Bros. confessed, 1911
2 Tu	☿ ☿ ☿ stationary. ☿ ☿ ☿
3 W	Mary Baker Eddy died, 1910
4 Th	H. O. Havemeyer died, 1907
5 Fr	☿ ☿ ☿ ☿ gr. hel. lat. N.
6 Sa	☾ in apogee. St. Nicholas

MOON'S SIGNS

Sun rises	Sun sets	Moon sets
H. M.	H. M.	H. M.
7 9 4 29	7 49	11
7 10 4 28	8 59	11
7 11 4 28	10 5	10
7 12 4 28	11 8	10
7 13 4 28	morn	9
7 14 4 28	0 10	9

SUN EAST

Sun rises	Sun sets	Moon sets
H. M.	H. M.	H. M.
7 4 4 34	7 54	9 4
7 5 4 34	7 64	10 8
7 6 4 33	7 74	11 10
7 7 4 33	7 84	morn
7 9 4 33	7 94	0 11

49. 2d Sunday in Advent. Luke 21 9h. 13m. Day's Length, 9h. 23m.

7 S	☿ ☿ ☿ T. B. Reed d., 1902	7 15 4 28	1 11	8	7 10 4 33	1 11
8 M	King Oscar died, 1907	7 16 4 28	2 12	8	7 11 4 33	2 10
9 Tu	Briceville Mine Explosion, 1911	7 17 4 28	3 15	8	7 12 4 33	3 12
10 W	☿ gr. elong. W., 21° 2'	7 18 4 28	4 20	7	7 13 4 33	4 16
11 Th	Gen. Garcia died, 1898	7 19 4 28	5 27	7	7 14 4 33	5 22
12 Fr	☿ ☿ ☿	7 20 4 28	6 37	6	7 15 4 33	6 31
13 Sa	☾ 13th. ☿ gr. libr. E.	7 21 4 28	rises	6	7 16 4 33	rises

50. 3d Sunday in Advent. Matt. 11 9h. 7m. Day's Length, 9h. 18m.

14 S	Geo. Washington died, 1799	7 21 4 28	5 10	5	7 16 4 34	5 17
15 M	☿ ☿ ☿ R. L. Gibson d., 1892	7 22 4 29	6 21	5	7 17 4 34	6 27
16 Tu	☿ ☿ ☿ Gen. Terry died, 1890	7 23 4 29	7 36	4	7 18 4 34	7 41
17 W	King Leopold II. died, 1909	7 23 4 29	8 52	4	7 18 4 34	8 56
18 Th	XIII. Amendm't ratified, 1865	7 24 4 29	10 7	3	7 19 4 35	10 10
19 Fr	☾ in ☿	7 25 4 30	11 22	3	7 20 4 35	11 23
20 Sa	☾ 20th. Vattel died, 1767	7 26 4 30	morn	2	7 20 4 36	morn

51. 4th Sunday in Advent. John 1 9h. 5m. Day's Length, 9h. 15m.

21 S	☾ in perigee. St. Thomas	7 26 4 31	0 37	2	7 21 4 36	0 36
22 M	☾ enters ♍. Winter begins	7 26 4 31	1 52	1	7 21 4 37	1 50
23 Tu	Battleship Utah launched, 1909	7 27 4 32	3 7	1	7 22 4 37	3 4
24 W	Clarence King died, 1902	7 27 4 32	4 24	0	7 22 4 38	4 19
25 Th	Christmas Day	7 28 4 33	5 41	sl.	7 22 4 38	5 35
26 Fr	☿ ☿ ☿ St. Stephen	7 28 4 34	6 53	1	7 23 4 39	6 46
27 Sa	☾ 27th. St. John, Evang.	7 29 4 34	sets	1	7 23 4 40	sets

52. 1st Sunday after Christmas. Matt. 1 9h. 6m. Day's Length 9h. 17m.

28 S	☿ ☿ ☿ Innocents	7 29 4 35	5 29	2	7 23 4 40	5 35
29 M	☿ in ☿: ☿ ☿ ☿	7 29 4 36	6 39	2	7 24 4 41	6 44
30 Tu	Iroquois Theatre Fire, 1903	7 29 4 36	7 48	3	7 24 4 42	7 52
31 W	☿ in ☿.	7 30 4 37	8 54	3	7 24 4 42	8 57

The diseases that have to be controlled by quarantine are never controlled.

SOME TESTED TRUTHS OF PUBLIC HEALTH.

It is better to sleep in a cold room than in a cold grave.

Clean water, clean food, clean air, clean hands: these are the gems of health.

Keep your germs to yourself; make your neighbor keep his.

Many an undertaker would go bankrupt if people were as careful of their health as they are of their money.

A trash-proof well and a fly-proof privy help to make a disease-proof family.

A filling in time saves a tooth—and a digestion.

The healthy mother who nurses her child gives it a heritage of health more precious than four per cents.

Fresh air is cheaper than drugs, better than doctors and always on call.

A syringe of antitoxin to prevent diphtheria costs fifty cents; a funeral is cheap at two hundred dollars.

A sanitary school is as essential to a child's health as is a good mother.

Many people would blush to keep their kitchens as filthy as they keep their mouths.

Twenty dollars spent in improving the sanitation of a country school may mean more to the pupils than five years' instruction.

Good teeth are necessary to good digestion. Save your teeth and you save your stomach.

Labor spent in ventilating rooms is labor saved in digging graves.

If the people of Virginia would contribute to public health what they spend on medicine, they could save their doctors' and undertakers' bills.—*Virginia Health Almanac*.

THE FEEDING OF INFANTS AND CHILDREN.

If the mother be healthy, the infant's sole nourishment for the first eight or nine months of its life should be the mother's milk, which forms the only perfect food for the child at this time.

For the first six weeks of its life the infant should receive nourishment every second hour from 5 a. m. to 11 p. m., and should be removed from the breast whenever it shows any inclination to stop sucking.

During the second month feeding every three hours is generally sufficient, and from this time up till eight months, the intervals should be three to four hours.

After the eighth or ninth month other foods may be introduced at some of the feedings, and between the tenth and twelfth months the child should be gradually weaned.

Should the mother be unable to suckle the child, a young and healthy wet-nurse may be obtained, or the infant may be reared on substitute foods.

If it be decided to employ artificial foods, the milk of the cow, ass and goat, and condensed milk have been proposed as substitutes for that of the mother, whilst many prepared foods for infants are supplied. These usually contain starchy matter in a readily assimilable form, as well as some malt preparation.

"The so-called 'infants' foods' usually contain some malted farinaceous substance, and they are of value as additions to, not as substitutes for milk." Ordinary farinaceous foods, such as arrowroot, are never admissible before the fourth month, and rarely advisable until after the seventh.

Cow's milk is generally selected as a substitute for the mother's. The following table shows their average composition :

	Human Milk.	Cow's Milk.
Water	87.163	87.012
Fat	4.283	4.209
Casein	1.046	3.222
Milk-sugar	7.407	5.000
Ash .....	.101	.527

Not only does cow's milk differ in chemical composition from that of the mother, but it is distinguished also by its physical properties. Cow's milk, therefore, must be modified in order to make it a fit substitute for human milk.

Human milk is poorer in casein, but contains more lact-albumin. By diluting cow's milk with water the proportion of casein can be reduced to its proper level, whilst the addition of cream and milk-sugar (lactose) gives the cow's milk its proper amount of fat and sugar. The water for dilution should be boiled, and it is still better to use very thin barley water or decoction of arrowroot (one fluid drachm to one pint) ; this prevents the curds formed from being too large.

It is preferable to sterilize the milk itself. This is best done in proper milk sterilizer ; failing which, heating the milk to the boiling point and then cooling rapidly is the method employed.

Pasteurization of milk consists in keeping it for at least twenty minutes at a temperature of 150-160 degrees Fahrenheit (60-65.6 degrees C.). This process is found to destroy pathogenic microbes,

and it is claimed that the natural taste and quality of the milk are retained.

Some authorities state that cow's milk, efficiently sterilized, is best given undiluted, as hard curds are not formed in the stomach, and the infants gain weight more rapidly on undiluted than on diluted milk.

Dilution: This is the general practice. Provided the milk has not been previously watered, the proportion for infants at various ages may be taken as follows:

Age of child.	Proportions of	
	Milk.	Water.
Up to 1 month	1	2
From 1 to 3 months	1	1
From 3 to 4 months	1	$\frac{1}{2}$
From 4 to 5 months	1	$\frac{1}{3}$

From the fifth or sixth month onward the milk may be given undiluted.

Sugar: Add 60 grains, preferably milk-sugar (lactose), to every four fluid ounces of diluted milk.

Fat: Add one dessertspoonful of cream to every four fluid ounces of diluted milk.

The amount of cow's milk to be given, and other particulars, are summarized in the following table:

Age.	Number of feedings in twenty-four hours.	Interval between meals by day.	Night feedings (10 p. m. 7 a. m.)	Quantity for one feeding.	Quantity for twenty-four hours.
		Hours.		Fluid-ounces.	Fluid-ounces.
3d to 7th day.....	10	2	2	1-1 $\frac{1}{2}$	10-15
2d to 3d weeks.....	10	2	2	1 $\frac{1}{2}$ -3	15-30
4th to 5th weeks.....	9	2 $\frac{1}{2}$	1	2 $\frac{1}{2}$ -3 $\frac{1}{2}$	22-32
6th week to 3d month...	8	2 $\frac{1}{2}$	1	3-4 $\frac{1}{2}$	24-36
3d to 5th month.....	7	3	1	4-5 $\frac{1}{2}$	28-38
5th to 9th month.....	6	3	0	5 $\frac{1}{2}$ -7	33-42
9th to 12th month.....	5	3 $\frac{1}{2}$	0	7 $\frac{1}{2}$ -9	37-45

—*Infant Feeding.*

IF

(From Rewards and Fairies by Rudyard Kipling.)

If you can keep your head when all about you
Are losing theirs and blaming it on you;
If you can trust yourself when all men doubt you,
But make allowance for their doubting too;
If you can wait and not be tired by waiting,
Or being lied about don't deal in lies,
Or being hated don't give way to hating,
And yet don't look too good, nor talk too wise;

If you can dream—and not make dreams your master;
If you can think—and not make thoughts your aim;
If you can meet with Triumph and Disaster
And treat those two impostors just the same;
If you can bear to hear the truth you've spoken
Twisted by knaves to make a trap for fools,
Or watch the things you gave your life to, broken,
And stoop and build them up with worn-out tools;

If you can make one heap of all your winnings
And risk it on one turn of pitch-and-toss,
And lose, and start again at your beginnings,
And never breathe a word about your loss;
If you can force your heart and nerve and sinew
To serve your turn long after they are gone,
And so hold on when there is nothing in you
Except the Will which says to them: "Hold on!"

If you can talk with crowds and keep your virtue,
Or walk with Kings—nor lose the common touch;
If neither foes nor loving friends can hurt you;
If all men count with you, but none too much;
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the Earth and everything that's in it,
And—which is more—you'll be a Man, my son!

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Anything you want to know about the public health we will try to tell you.

Any information you want about communicable diseases of domestic animals we will help you to get.

Address communications to Jacksonville, Fla.

Do men gather grapes of thorns? or figs of thistles?—Mat. 7:16.

THE BREAKING OF DAWN

That progressive paper, *The Pensacola Journal*, which generally gets what it goes after, is impatient over the "wishy-washy" policy of continental America in dealing with the smallpox question. Read what Frank Mayes has to say about vaccination, and then you cute "fellers" of the press who delight to be known as "antis" and are stubbornly prejudiced, "sit up and take notice":

SANITARY SCIENCE IN THE PHILIPPINES AND HERE.

(*Pensacola Journal*, Feb. 9, 1913.)

Hearst's Magazine contains the following interesting facts concerning the elimination of smallpox in the Philippines:

In the annual report for 1911 of the board of health for the Philippine Islands Dr. Carol Fox gives some interesting statistics showing the effects of sanitation. It is noted, for example, that more than ten million people have been vaccinated in the Philippines without a single death occurring. Thus smallpox, which had been prevalent since the occupancy of the islands by the Spaniards, has practically ceased to exist.

It is difficult to pass by this particular item without a word of comment that has general application.

Vaccination for smallpox, as everybody knows, was introduced by Jenner more than a hundred years ago. At the time when the method was introduced smallpox was an epidemic disease that claimed about one-tenth of the total population of Europe by death. Its familiar marks were upon the visages of a majority of the remainder.

Soon after the introduction of vaccination the prediction was freely made that smallpox would be altogether eliminated from the world within a few decades. The prediction was so nearly fulfilled that smallpox became a rare disease. But just because vaccination had so nearly eliminated the malady, the malady itself was no longer feared, and the manner of its subjugation was in many quarters all but forgotten.

Instead of taking the relatively simple steps that would be required to complete the elimination of smallpox, the general public became indifferent to the disease, and in some quarters, by a curious paradox, societies were formed to antagonize the practice of vaccination. So a few residual cases of smallpox have been allowed to exist and transmit the germs of the disease generation after generation. That such is the case is a reproach to human intelligence; but the fact being as stated, it is worth while to lay special emphasis on the new object lesson in the preventability of smallpox that the recent experience in the Philippines has given.

The foregoing, when considered in connection with the fact that smallpox has never been eliminated in the United States, affords a fine object lesson of the difference between the compulsory application of sanitary science, as it exists in the Philippines, and the voluntary

application of the same smallpox preventive in the United States.

In the Philippines vaccination is compulsory. Result—smallpox is now unknown. The same condition exists in Germany.

In the United States we leave such things to the voluntary will of our people. Result—smallpox we always have with us.

Personal liberty under this great American government is a fine sounding term, but in practice it frequently results in danger to the health and lives of the whole public.

HOOKWORM INFECTION THROUGH SKIN

Dr. Bailey K. Ashford, who was appointed a member of the Porto Rico Anemia Commission, and who found that that disease was due to the American hookworm, as far back as 1899, and who had been treating the disease and relieved thousands of sufferers two years before Stiles' first bulletin on Hookworm Disease was published, and who up to the present time has treated no fewer than three hundred thousand cases, takes little stock in hookworm infection except through the skin.

The State law, which provides for screening dining-rooms and kitchens and "passage ways leading thereto" is inoperative if the screen doors are kept wide open. Simply hanging the doors or putting in the window screens is not altogether complying with the law. There was a definite purpose to be accomplished when the senator introduced and passed that bill in the legislature of 1911, and that was to keep out flies: keep out flies which might be contaminated from distributing typhoid germs to the food.

The House of Commons has a Select Committee that is now inquiring into the patent medicine sales, advertising, purity, and other features. The Home Secretary, on the witness stand, stated that it had been the view of the Home Office that the advertisement and extensive sale of proprietary medicines was a mischief, but that it was an evil that must be met rather by the spread of education than by legislation.

That is worth saying again, for it doesn't apply only to proprietary medicines, but to vaccination, for example. It doesn't apply only in England, but equally in Florida. And that is the position of the State Board of Health in regard to vaccination. While the Board knows the value of vaccination in preventing smallpox, it also knows that there are many people who prefer to take their chances with smallpox.

These the Board will protect as far as possible. But it must warn them that it can not give as complete protection as they desire, and that from time to time some of them will get caught.

A man wrote from Illinois and inquired about the laws governing bringing his cattle with him. He is going to move to Florida. We had to tell him that if he brought his cattle they would die of tick fever. It was the truth and we had to tell it. Don't know whether he will come now himself or not. There are a lot of other people to come, too. They have got to sell their tick-free cattle up there and get ticky cattle after they get here. In other words, they have got to sell their well cattle and get sick cattle.

NOTICE

Parcel post stamps are good only on matter that has heretofore been mailed as fourth class. In sending specimens to the laboratory, or in sending any matter to the State Board of Health, it will save delay and misunderstanding if all articles are properly posted. In the first place, when parcel post stamps are attached to articles that it is not supposed to carry, it is the postmaster's duty to hold the article in question for postage, which causes no inconsiderable delay and inconvenience. Remember that parcel post stamps are to be used only on fourth class matter.

FEAR VERSUS REASON

In the days of long ago, the golden days of childhood, when writing was taught not by the Spencerian method, but by the school mistress setting copies for the students to follow, and when each page of the copy book commenced with a letter of the alphabet, there was a sentence beginning with the letter "F" which read: "Fear is more powerful than reason," which impressed the writer very much at the time. As a child I could not understand its meaning. As a youth I resented the thought, but now as the shadows are lengthening over the pathway of life and the end of the road may be dimly seen, with the milestones traveled lessening in the distance passed, I am forced to admit that fear is more powerful than reason, and that mankind in general is governed by, and stands in greater dread of supposed danger than there is a willingness to acknowledge or of which to calmly argue out the probability. While we pride ourselves upon our

advanced civilization and boast perhaps not without just cause of the progress made in the sciences, and have ground to be proud of the achievement of both, yet if we stop to think a bit we must admit that there is still a mysticism of the savage in our nature and a spirit of superstition in which fear is a potent factor whispering of apprehension of danger to come, rather than giving ear to sound argument or intelligent judgment. To follow is easier than it is to lead. The soldier in the ranks has a simpler task to fulfill than the general who directs and initiates an attack, and the sanitarian who sits steady in the boat and does not chase will o' wisp of improbable uncertainties is certain to command more respect from the people than his visionary or theoretical brother. It is so easy to drift with the tide. The craft will float along with its own weight and with no exertion or propelling force from within if in the tideway. So, too, is it an easy matter to follow in the wake of popular clamor against this or that supposititious menace to public health and to advocate this or that idea of progressive—so called—sanitation based altogether on theory and not on practical experience, and without carefully sifting all facts or balancing the results gained from cautious observation. It is not sound wisdom to recommend anything either to protect life or preserve health on speculative theory or supposed possibility. When a deviation is made from known and well proven facts to the realms of possibility and not probability, then it is that the sanitarian is getting into deep water and the element of fear dislodges reason and is given a greater force or motive for action than would have been the case had calm and deliberate judgment, based upon reason, been given the preference either in argument or recommendation. Sooner or later a reversal of judgment follows, and the public then begins to doubt whether we really know what we are talking about. Sensational advice in a would-be guarding of the public health, and a play to the galleries for popular approval on the ground of progressive sanitation, is really a hindrance to the advance of preventive medicine, and sooner or later reacts and brings discredit on the individual or board who recommends it.

TWO COMMON FALLACIES

Some people, supposedly knowingly to themselves, but without adequate information of facts, speak of this or that ailment with the assurance of one well versed in the subject. For instance, we often hear a person say, "I'm bilious," with no fixed idea in mind of what he or she is saying. When asked what is meant, whether too much or

too little bile is wandering around in the system or circulation, no intelligent answer is given; in fact, more frequently than otherwise, the reply is, "I don't know, but feel badly." My tongue is coated, appetite lost and sleepy all the time," or some chain of symptoms is described. These people are an easy prey to the patent medicine seller, and fall into his clutches with amazing pliancy. The liver and its accessories is a much abused organ, abused in the sense that it is mistreated from over-eating and gormandizing, and abused through ignorance of its function. A little insight on the physiological processes of various organs of our body should save not only our health from pernicious doctoring, but our pockets from useless expenditure.

There is another common error into which many people fall, and upon which the patent medicine people fatten, and that is "kidney trouble." There is scarcely a day which passes but one does not hear it said: "I know that I have kidney trouble because my back aches so." Now is it true that a pain in the back indicates a diseased condition of the kidney? Is it not true, according to physiological anatomy that the kidney is but sparingly supplied with sensitive nerves, and that unless there is a destructive inflammation of the organ resulting in abscess and pus formation that pain as a distinct symptom or indication is lacking? Is it not true, also, that it is only through chemical and microscopical examination of the excretion of the kidney that a diseased condition of the working parts of the kidney is found out? Now if that is so, and it is so, what has a pain in the back, which doubtless is purely muscular, to do with the kidney? The sad part of all this is the outcome of a self-constituted knowledge of the functions of the kidney. A speedy visit to the nearest drug store, either of one's own volition or most probably on the advice of a friend, to purchase something "good for kidney trouble." Here is found no end of patent medicines good for anything, and everything, according to printed wrappers bearing testimonials from the so-called "distinguished citizens," and especially for "kidney trouble"; and the sufferer from a muscular backache deluded with the idea of having a serious kidney trouble, easily falls a victim to charlatans and quack medicine vendors by purchasing a compound of which he knows nothing, and of which the druggist can give no information.

Alabama has 160,000 acres tick free pasture land. They just went after it and cleared it.

A NEW USE FOR GERMS

There may be good germs and bad. There certainly are good germs and bad. We all agree that the diphtheria bacillus when it causes diphtheria is a bad germ. It is also held that when it inhabits a well throat and refuses to be dislodged, it is liable to cause the spread of diphtheria by getting a few germs loose here and there and these finding their way into other throats and setting up trouble. These carrier cases of diphtheria are a problem. For, after a case of diphtheria gets well, it is frequently a great proposition to get the individual rid of the germs. They defy our efforts to dislodge them.

Quite recently other germs have been called into service to get rid of the diphtheria germs. When a carrier case still persists in carrying, his throat is sprayed with a culture of the staphylococcus pyogenes aureus (Whew!), and that is said to get rid of the diphtheria germs.

Dr. Ravenel of Wisconsin reported at the American Public Health Association excellent results, and his experience seems to be pretty generally confirmed by others who have tried it.

WHAT TO DO IN CASE OF SMALLPOX

First of all report it to the State Board of Health. If uncertain as to whether it is smallpox, report it just the same, and let the Board send an expert to settle the matter.

The care of the case should then be given over to some one who has had smallpox or who has been vaccinated. All persons exposed or likely to be exposed should be promptly vaccinated, and after vaccination takes *any* of them can see the case with perfect safety—just as the physician himself can see it with safety.

If you are afraid to get vaccinated, or for any other reason fail to do it, and get smallpox, the Board will take the best care of you it can. It will furnish you plain food, provided you are indigent. It will give you medical attention provided you ask for it, but it is against the law to thrust medical attention upon you. It will keep you shut up in your own house, provided you have one, or if you are in reach of a pest house it may send you to that. It will also pacify the neighbors the best it can, and endeavor to keep them from doing you violence. All this will the Board do when you get smallpox. Or, if you prefer, it will keep you from having smallpox, without danger and without cost, just as the physicians themselves keep from getting it—this if you choose.





EMERGENCY SUPPLIES FOR THE HOME

In every household, even in the middle of a city with drug stores near by, it is wise to have a few simple remedies and surgical dressings on hand. This is more especially the case if there are children in the household, as little people are so likely to hurt themselves and are much more liable to sudden illness than are grown-ups.

Neat emergency cases which fill all requirements fairly well may be purchased. Being especially made for the purpose, they possess the advantage of having a place for everything and everything in its place. They are rather expensive, however, and there is no reason, if you care to take the trouble, why you can not buy your own box and fill it to suit your own particular requirements. The standard size for your bottles of liquid medicines had best be two ounces, and the square bottles should be used. The box should be just high enough to take a two-ounce bottle corked, standing up, and big enough for all the supplies you need. Medicines prescribed by a doctor in illness are much better put in a safe place where they will not be meddled with, so it will be wise to leave space for them in your box. This may be made of metal or hard wood and should, preferably, have a key.

The supplies suggested for the ordinary first aid household box are as follows:

- Alcohol.
- Aromatic spirits of ammonia (rubber cork).
- Castor oil.
- Epsom salts (or 1/2 dozen Seidlitz powders).
- Lime water.
- Mustard (powdered).
- Sodium bicarbonate.
- Syrup of ginger.
- Syrup of ipecac.
- Witch hazel.
- One-tenth grain calomel tablets (small bottle, 50-100 tablets).
- Five-grain Bismuth subnitrate tablets (100).
- Carbolized vaseline (1 glass jar).
- 1 drachm bottle oil of cloves (labeled "Poison").
- 1 bottle 50 soda mint tablets.
- 1 tin talcum powder.
- 1 small package antiseptic gauze.
- 1/2 pound absorbent cotton.
- 6 gauze roller bandages (3 large and 3 small).
- 2 U. S. army First Aid dressings.
- 1 roll oiled silk.
- 1 roll old muslin.
- 1 small bottle collodion, with brush.

- 1 box tooth plasters.
 - 1 box tooth wax.
 - 1 box corn plasters.
 - 1 sharp knife.
 - 1 pair scissors.
 - Pins (ordinary and safety).
-

It is particularly gratifying to note that the death rate in general for the city of Jacksonville has been decreased during the past year from 21 per cent to 18 per cent. (Resident death rate 14 per cent, 1912.) It is gratifying because it shows what a systematic and aggressive policy will accomplish when backed by knowledge of how to do things, and Dr. Terry, Jacksonville's city health officer, is deserving of great praise for accomplishing so much.

THE REFERENDUM AND TUBERCULOUS DAIRY HERDS

Los Angeles undertook to get rid of tuberculosis among the dairy herds. An ordinance was accordingly passed and referred to the people who defeated it. So Los Angeles will continue to have tuberculous dairy herds.

THE MEDICINE MAN AND TICK ERADICATION

By C. F. DAWSON, M. D., D. V. S.,
Veterinarian, State Board of Health.

The present agitation for the eradication of the cattle tick has a special significance to the medical profession. Not only does the cow tick convey a blood parasite to the cattle it bites, but this parasite has some points in similarity to the malarial organism in man, in that it is carried by an insect, and that it lives in the red blood-corpuscles, destroying these, reducing, in some cases, the corpuscle count to 1,500,000.

Of special interest are the facts that this intra-corpuscular parasite, the *Pyrosoma bigeminum*, was discovered by a medical man, Theobald Smith, M. D. The life history of the cattle tick, its host, was discovered by a medical man, and the idea of tick eradication was first introduced by the same medical man, Cooper Curtice, M. D. It is, therefore, to these three discoveries that the final riddance from the cattle industry of the formidable disease produced by this parasite will be due.

One of the chief glories to be added to those already enumerated

is the fact that the discovery by Dr. Theobald Smith that this *Pyrosoma bigeminum*, carried by the cattle tick, the cause of Texas cattle fever, or southern cattle fever, or cattle malaria, was the first instance in the history of medicine where it was proven by scientific investigation that a disease can be insect-borne. This was truly an epoch in medical history.

It is also of special interest that the cow tick can be eradicated. It is being eradicated. No other disease-producing insects can be eradicated. They can only be controlled.

Digressing, what a boon to humanity, could mosquitoes and hook-worms be eradicated. Malaria, yellow fever and uncinariasis would cease for want of carriers, and a cause.

Finally, it appears to the writer that the eradication of the hook-worm, which is sapping the vitality and manhood of millions, is not only not an impossibility, but that it could be carried out as successfully as is tick eradication.

In the good old State of North Carolina, and in the county of Buncombe, famous for an Asheville, there has arisen some sharp criticisms of the State Board of Health. The best we can make it out, the cause of the controversy is that some people don't want *anybody* to have small-pox, and some people insist on having it; and that started the row.

As for our part, we look upon good health and religion somewhat in the same light—if you have to hold a man to baptize him it's not apt to take, and you don't help the cause of religion very much.

There is no better way of knowing a man then by comparing his front with his back yard. One who cleans up the part that shows and leaves dirty the part that doesn't show—the less dealings you have with him the better.

A large number of people seem to think that bad smells are indicative of disease producing causes. No one disputes that decaying matter, whether vegetable or animal, is discomforting to the nostrils as well as offensive and disgusting to sight; yet the clearest sparkling water from a pretty gurgling brook may hold millions of death dealing germs, and so, too, the brightest in nature's garden of flowers in delicate odor and perfume often causes physical discomfort and suffering in rose fever and nostril irritation to those peculiarly susceptible to the pollen of plants.

FOR PREVENTION OF MALARIA

Malaria is a mosquito-borne disease—that way and no other.

It follows then that those who protect themselves against the bites of mosquitoes escape malaria.

"But," you will say, "it is impossible to protect oneself against mosquitoes, at all times, and in all places."

And this is true. It is impossible. But the mosquitoes that transmit malaria bite only in the night. If, therefore, you protect yourself against mosquitoes during the night, you will not be bitten by malaria carriers and will not have malaria.

This amounts to saying that if you will sleep only in screened houses, or under mosquito nets, you will be safe against this disease.

It is fully recognized that there is a margin of error in this, for sometimes mosquitoes get into houses that are screened, and sometimes they get into mosquito nets, and sometimes people get bitten before going to bed when up late at night—all of which has to be reckoned with. But he who earnestly tries to escape malaria is infinitely safer than he who doesn't.

In addition to this there is something else that may be done. It is to be remembered that no mosquito can transmit malaria till after he has bitten some one who has the disease. Therefore, if all persons who have malaria were kept under mosquito nets, so as not to infect the mosquitoes, this would go a long way to protect others against the disease.

There is one other thing; this is for the doctor. During the first two weeks, or thereabouts, that a person has malaria, he can't infect mosquitoes. Therefore, if all cases are treated rigorously, so as to get well in two weeks or less, they will not infect mosquitoes, and thereby other people.

Now just one other thing about malaria: After one has it, and treats it slowly, and gently, like he was afraid to get rid of it, he becomes a chronic malaria carrier. That is to say, he gets well, or thinks he is, but still has some of the malarial parasites in his blood. Such a person is capable of infecting mosquitoes, and should religiously sleep under mosquito nets till free from parasites—this in the interest of others—and then he should continue to do so to keep from getting reinfected, this in the interest of himself.

But there are so many voluntary precautions in this that each had better take all the precautions he can.

Children should have plenty of fresh air, good food, exercise, rest and sleep. They should sleep in bedrooms with the windows open both summer and winter, and no child under twelve years of age should have less than nine hours of sound, refreshing sleep. Children should be taught to be regular in their habits of eating, sleeping and exercise. They should also be taught habits of personal neatness and cleanliness. Unless carefully watched they will not wash their faces, comb their hair or brush their teeth—*Press Service, North Carolina State Board of Health.*

From the hookworm eradication bureau of the Rockefeller Sanitary Commission of North Carolina, the following news notice is sent out:

The campaign of the hookworm eradication is making the most rapid strides in the history of the campaign. Seventy-one counties in the State have now made the local appropriation necessary to have six weeks devoted to a campaign of free examination and free treatment. The counties providing for the campaigns last Monday are *Currituck, Pasquotank, Perquimans, and Mecklenburg*. Hyde county is now the only one east of Raleigh which has not yet made provision to have the free treatment. The local appropriation is used solely for paying the local expenses of advertising, traveling expenses of a laboratory man, and the cost of thymol and specimen containers given out in the county.

During 1912 135,872 persons were microscopically examined for hookworm infection or about 450 persons for each week day of the year. For each dispensary day in January an average of 525 persons were examined and of these an average of 110 persons were found infected and given free treatment. The campaigns are conducted in six counties at the same time. The work is now in progress in Dare, Tyrrell, Camden, Pamlico, Moore and Union counties. Five counties—Wilson, New Hanover, Wake, Craven and Beaufort—have asked for a second round of dispensary work for the benefit of those who were skeptical when the first campaign was conducted, but have now seen the results of the cures in those who took the treatment and are desirous to again have dispensaries within their reach.

During the course of the outbreaks in both Los Angeles and Buffalo there was an effort on the part of certain residents to belittle the importance of the epidemics and the active measures being taken by the health departments, with especial reference to the publicity being given regarding the presence of the disease and the number of cases occurring. However, in neither case did this prove a material embarrassment to the health authorities, who received the earnest support of both the practicing physicians and the citizens in general.

The impression that publicity regarding such matters injures

municipal interests is based on a fallacy. The existence of an epidemic can not be concealed very long, and the absence of frankness in regard to the situation under these conditions produces a fear and suspicion that it takes some time to overcome.

There is nothing that inspires so much confidence in the ability of a community to cope with a sanitary problem as frankness and honesty at all times in stating existing conditions. It shows that the community has the situation in hand and that it has sufficient confidence not to be afraid to inform others as to what is going on. The ethics of concealment of epidemic conditions is of course indefensible.—*From Public Health Reports.*

TYPHOID IN WASHINGTON

The *Washington Post* explains that the prevalence of typhoid fever in Washington is due to the fact that during the Civil War the site now occupied by the Union Station was an old hospital camp and that the ground became saturated with typhoid; that now whenever that ground is disturbed, typhoid is to be expected; that recent excavations looking to terminal improvements resulted in an exacerbation of typhoid fever, and that the only way to escape it is to leave it undisturbed and that in the course of time it will die out.

That explanation has a familiar ring. It takes the doctor back to the days of venesection and laudable pus; it takes the traveler back to the stage coach; the housewife back to the spinning wheel, and the tallow dip. One can almost see the old dirt oven and smell the delicious fragrance of the ash cake crust, while listening to the voice of this Rip Van Winkle calling from the past.

THE WORST YET

The doctors gave Mr. Roosevelt tetanus antitoxin. That was not because he had lockjaw, understand—his bitterest enemy wouldn't accuse him of that—but to keep him from having it. The worst thing Mark Twain could think of was to have rheumatism and St. Vitus dance at the same time, but what about lockjaw in a political campaign?

SEVEN-DAY FEVER

Dr. J. C. Perry, of the Public Health Service, reports "seven-day" fever in Panama. If he hadn't told us it wasn't, we would've thought it was dengue.

"Frenzied Sanitation" is a species of mania which affects those engaged in health work and impels them to do impracticable things and give impracticable and senseless advice in the name of the Goddess Hygiea. For instance, quarantining pellagra, anterior poliomyelitis, and leprosy, with armed guards.

"Frenzied Finance" is destructive to business life and commercial advance. So likewise is "Frenzied Sanitation" a mischievous proceeding and ruinous to the cause of preventive medicine.

DON'T BE AN EASY MARK

Why do you have a spleen? No one knows. The best learned scientists of the world have come and gone, and still the riddle of the spleen remains unsolved. Some have thought that its function was this, and others that it was something else, and so on. In a few cases of surgical operations it has been necessary to remove a part or all of the spleen and the patient lived and nothing happened. Hence why is a spleen?

Whether or not we find a use for the spleen this point should be remembered. If the world's greatest scientists can't tell the use of the spleen, and if we get along about as well without it as with it, why do people break their necks buying "electric belts" or "magnetic pads," plasters, insoles, etc., for what the street fakers and medical fakers call "enlarged spleen," "torpid liver," "kidney disease," and a dozen and one other things that no one ever knew he had before? Such swindles belong to the "gold brick" class. When such ads of fakers appear it is a good time to keep your money in your pocket and "save your face." Take it from me, if you bite you lose, and the other fellow will set you down as one of the original easy marks.—*Press Service, North Carolina State Board of Health.*

MR. WILLIAM KOPMAN HYER

It is with a feeling of deepest regret that we note the death of Mr. William Kopman Hyer, of Pensacola, Fla., on February 16, 1913, at the age of 76 years. Mr. Hyer was a member of the first State Board of Health of Florida, having been appointed by Governor Flemming in 1889, and in later years served as its agent in Pensacola. He was a man of broad views, living a truly Christian life, and ever mindful of the comfort and welfare of those around him.

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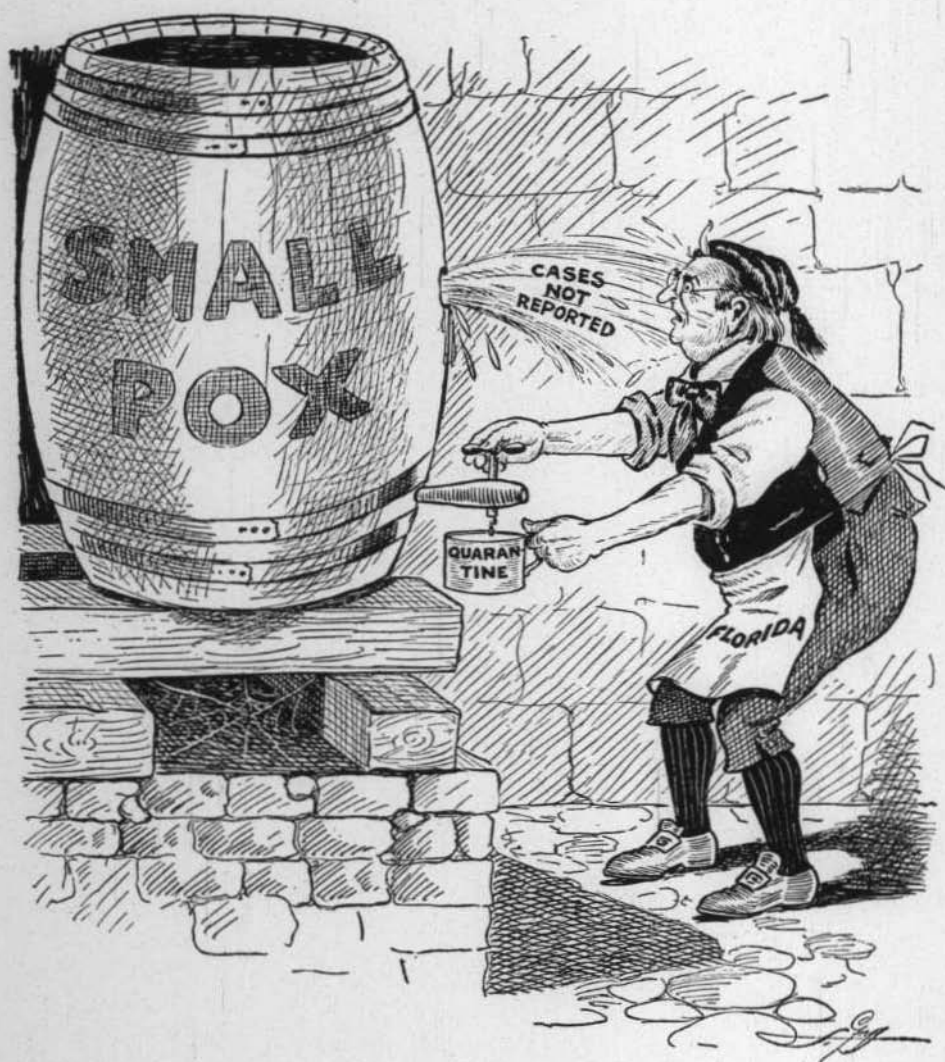
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After all, there is no aristocracy that is higher than the aristocracy of the daily bath.—Kipling.



THE PREVENTION OF MALARIA.

The preservation of health is the first law of nature and it is safe to say that none of us will deliberately do anything knowingly when by so doing we invite departure from good health. A hundred, fifty, yes ten years ago, we were all doing various things prejudicial to good health that none of us would dream of doing today. The life span of the human race has undoubtedly been lengthened as a result of our increased knowledge concerning the prevention of disease. Many scientists have in this way done much for the age in which they lived and also for future ages. But all was not easy sailing for these scientists, any more than it is for the men devoting their energies to the preservation of the public health today, and the fingers of derision have in the past, as in the present, been pointed at the men who advocated various measures for the good health of their fellow men. All of us can remember the opposition that vaccination against small-pox met with in the past but today there are but few that are not convinced what a great boon this simple measure has been and always will remain to the human race. Various measures to control or prevent typhoid fever that today are observed by all educated and thinking people have in the past met with scepticism, in fact it may be stated in a general way that any measure advocated for the good of the public health is pretty certain of meeting with considerable opposition; this is a peculiar, but nevertheless a true fact. But persistence, patience and perseverance gradually win out in all things, and today many measures, having in view the prevention of disease, that were formerly held up to derision and scorn, are quite generally observed.

We have all through the Southern States a disease that prevails in practically all warm countries, a disease that causes more sickness and suffering than any other three diseases and one to which the United States of America pays a toll amounting to \$100,000,000 every year, in addition to thousands of lives sacrificed, and causing sickness, suffering and loss of time to the wage earner among hundreds of thousands of our citizens. This disease is *malaria* and ponder well over the following sentence, "Malaria is an entirely preventable disease." Mark you, it is not a disease that can be partially prevented, or one that can be prevented in some instances, but it is an "entirely preventable disease." Dependent on the measures used, it could be stamped out by an entire nation or any part of that nation, by a State or any part of that State, by a county or any part of that county, all individuals in a town can prevent the disease from attacking them, and even in the absence

of collective and concerted action, the individual by taking certain precautions and carefully observing certain well defined directions, can prevent himself from becoming infected with malaria, regardless of the actions of his neighbors.

The natural query now is "how prevent a disease that is so universal, that comes as the warm weather approaches and increases as each succeeding summer month passes?"

The answer "protect yourself from the bites of mosquitoes." If mosquitoes were prevented from biting man malaria, perforce, would disappear. Ah, but you say, "Impossible!" one can not live in Florida or other Southern States without mosquitoes getting at you sometimes. But here again is the most significant statement yet made and one that immediately puts a different light on the practicability of the advice, "protect yourself from the bites of mosquitoes," for we add, "at night." Mosquitoes that bite during the day are harmless and are not capable of transmitting malaria. The insect that infects man with malaria bites only between sundown and sunrise or near those hours, so that the person who protects himself against the bites of mosquitoes during these hours will not contract malaria. But the pessimist may say, "Easy statements to make but how can you prove what you say?" And here is the most interesting chapter concerning the history of malaria. While it might be interesting to a few it is not practical in an article like this to recount the entire history concerning the scientific study of malaria, its causes, prevention and treatment; suffice it to say that this history covers a period antedating the birth of Christ up to the building of the Panama Canal, the completion of this engineering feat being what may be considered at the present time the closing chapter of the history of this dangerous disease. That portion of the history concerning how it was proven that mosquitoes carry malaria to man, and that the disease can be contracted in no other way, is however of practical interest and a story that should be familiar to all who live in malarial countries.

It was in the year 1900 that it was definitely determined by scientists, who had been carrying on experiments for some time, that the actual manner in which man became infected with malaria is by being bitten with mosquitoes, and to prove that their findings are correct, carried out the following procedure. Possibly we are a little ahead of our story—and it should be stated before going further that it was not thought that ALL mosquitoes carried malaria, but only certain species or varieties, and these only after they had fed on the blood of an individual suffering with malaria.

Now at this time (1900) malaria was a very common disease in Italy and mosquitoes were very numerous. On the other hand malaria was practically an unknown disease in London, England, except for the cases that came into the city from malaria-infected regions, that is to say no cases of malarial fever were contracted in London, nor had any been contracted there for many years. To prove therefore, beyond any doubt, that mosquitoes gave malaria to man, a number of the insects were captured in Italy, allowed to feed on the blood of men suffering from malaria, and then transported to London, where they were allowed to bite two gentlemen who never previously had had malaria, or had lived outside of London. Both of these men a very few days later came down with attacks of malaria, and similar parasites were found in their blood as had previously been found in the blood of the men on whom the mosquitoes first fed in Italy. Now this demonstrated pretty conclusively that mosquitoes carry malaria to man, but it did not prove that there are no other ways in which the disease can be contracted, and if this discovery is to be of practical value to mankind it is necessary to satisfy ourselves that the fever can not be contracted under any circumstances other than through the bite of malaria-infected mosquitoes.

There is little doubt that the most popular opinion held by the general public concerning the cause of malaria is that we contract the disease from the air, some holding that it is the miasmas common around swamps, others that breathing night air caused one to become infected. Now, satisfied among themselves that these and other similar theories were not correct, a number of gentlemen determined to live for several months in a severely malaria infected locality and at a time of the year when the disease is at its highest point, taking no precautions against the disease other than protecting themselves against the bites of the mosquitoes. They accordingly took up their residence in Ostia, a settlement in the Roman Campagna noted at that time for the prevalence of malaria and for the severity of the infections contracted there. They were most careful in their preparations, which consisted of making their little house absolutely mosquito proof, this being attained of course by carefully screening. Other than living in this mosquito proof house, to which they retired shortly before sundown—remaining there until after sunrise, they took no other steps against contracting malaria; they drank the same water, ate the same quality of food as the natives of the place, exposed themselves to the sun and to all kinds of weather—in fact, led exactly the same kind of

a life as their neighbors, the natives, with the one exception of having protection against the bites of mosquitoes between sundown and sunrise. Not a single member of the party contracted a case of malaria during the entire three months, while the native residents of the settlement without an exception had attacks of malaria during the same period.

So it has been proven beyond a doubt that

(1) Mosquitoes carry malaria from man to man.

(2) That the disease can be contracted in no way other than by being bitten by malaria-carrying mosquitoes.

With these two most important points definitely determined beyond any possibility of a doubt, it is now necessary to consider from a practical standpoint what we can do to prevent ourselves from becoming ill with malaria. It was stated in a previous paragraph of this article that a nation, State, country, or town, could by independent action stamp out the disease from their respective localities. Possibly we get away from the practical side of the prevention of malaria when we say that a nation such as ours could stamp out the infection from shore to shore, but it is true, nevertheless, that by the united actions of federal, State, county, and municipality officials, together with the individual, we could, if we would, eliminate the disease entirely. It may be safely stated, however, that the position taken by the individual and his interest in the elimination of any disease is really the most important unit in the stamping out of any disease. Just so in malaria—federal, State, county, and municipal officials would be practically helpless if they did not have behind them the co-operation of the individual, so that inasmuch as this article is intended *for the individual* we shall not discuss the broad subject of federal, State, county, or municipal actions that are necessary for the prevention and eradication of malaria, but will confine ourselves to the measures that followed out by the individual will prevent that individual from contracting malaria, *regardless of the action of his neighbor*.

We have shown that malaria is given to man by the mosquito, but it is also true that man gives malaria to the mosquito, so that with the presence of malaria-infected man and mosquitoes of certain species we have a continuous cycle in the propagation of malaria. Remove either the "mosquito" or the "malaria-infected man" and the disease would have to disappear. It is often asked if mosquitoes give malaria to man, and man give the mosquitoes malaria, where did the disease

originate? This question cannot be answered any more than many other questions pertaining to the evolution of both animal and vegetable life. There are many things concerning the past that are just as impossible of our understanding as are many things concerning the future. We will now briefly consider what takes place when man and the mosquito become infected with malaria, considering first the infection of man. A mosquito infected with malaria bites man, injecting at the time of her biting saliva which contains numerous little parasites. These at once gain entrance to the red cells of man's blood and gradually grow, becoming larger and larger. After a definite length of time the single parasite occupying a single red cell has by a process of evolution multiplied and instead of a single parasite there are in this red cell from 18 to 24 parasites. The red cell now ruptures and the chill familiar to all living in malarial countries takes place. In certain types of malaria (there are four types) there is no chill—simply a decided rise in the temperature or fever. Following the chill or rise in temperature each of the 18 to 24 parasites enter other red cells, this process going on indefinitely depending on treatment or certain other conditions. This in a brief manner describes how man became infected with malaria and what follows after the parasites are once introduced by the mosquitoes. We will now consider how the mosquito becomes infected with malaria by man.

After the process just described, as taking place in the blood of man, goes on for a certain length of time certain of the parasites that re-enter other red cells undergo a transformation or change—that is an evolution. They take on different shapes and remain as such while in the blood of man. These are termed sexual forms and while they do not undergo any change in the blood of man, as soon as they are sucked up by the mosquito, while this insect is biting man, and reach the stomach of the insect, changes or evolution is once more under way. These so called sexual forms constitute both male and female and while it is not practical in an article of this nature to follow the parasite through all its stages of evolution it may briefly be stated that as a result of the female being fertilized by the male, which occurs as soon as the forms reach the stomach of the mosquito, bodies are formed which result in the formation of tiny parasites which finally become lodged in the salivary gland of the mosquito, later becoming free in the saliva and being the tiny parasite with which the mosquito infests man with malaria. The process is repeated again and again and so we have and now can see and understand the cycles

of the evolution of the malarial parasites in both man and mosquitoes. Is it not now easy to understand, reader, the previous statement, remove either the "mosquito" or "malaria-infected man" and the disease will have to disappear. Now it is very evident that the individual is helpless in regard to the removal of the mosquitoes; it would manifestly be useless for him to destroy the breeding places in his own yard if his neighbor took no measures to destroy those in his. It is also evident that the individual is unable to remove "malaria-infected man." What, then, is the practical manner for the individual to fight against malarial infection? "Protect yourself from the bites of mosquitoes between the hours of sundown and sunrise." A simple measure, not as hard or impractical to carry out as it may seem to those who have never tried it, but nevertheless one that requires the careful observance of certain well defined rules—all having in view protection against the bites of malaria carrying mosquitoes—but by the strict observance of these it is within the power of any man, woman, or child, regardless of how much malaria there is in their community, or of the actions of their neighbors, to keep from becoming infected with malaria. Individual efforts toward malarial prevention should consist in the destruction of all mosquitoes within the home, the proper and efficient screening of the home, and the sleeping under mosquito canopies.

Even the children of a household can engage in a morning hunt for the mosquito within the home, and by looking closely in the closets and dark room corners many of the insects will be found and can be destroyed. Any parent would be well repaid for stimulating an interest among their children in the method of mosquito destruction, by giving a weekly prize to the youngster having the biggest catch at each week end. Sulphur and other insecticides may be burned in a house, the mosquitoes gathered up with a broom and destroyed. The use of certain oils, such as citronella, will give a certain amount of protection against the bites of the insect, but their use is not very satisfactory.

Probably the most important individual aid toward the prevention of malaria is the use of efficient screening. Have your windows, doors and verandahs all screened, and remember that the greatest curse is imperfect screening. There is nothing more dangerous than fancied protection, a protection in which you feel secure, but as a matter of fact is imperfect. The size of the mesh is an important consideration—nothing larger than eighteen to the inch is a safe screen in a malarial

country. Windows should be screened their entire length, in a manner that the raising or lowering of the window does not interfere or necessitate the removal of the screen. A simple and efficient manner to screen windows is to tack the screening on the window casing, covering the edges of the wire with a narrow moulding. All doors should be well screened and care maintained in keeping them closed. All fireplaces and chimney holes not in use should be stopped up; in fact, there must not be an opening of any description within the house that is not either screened or closed up. The screening of the verandah is a very important point. It is not uncommon to see a perfectly screened home in so far as doors and windows are concerned, but the good work all spoiled by the family on a hot summer evening sitting on the verandah with no protection against the malaria-carrying invader.

MOSQUITO CANOPIES.

Again, it matters not how well the home may be screened, it is probable that some mosquitoes will find their way in. On this account no person is absolutely safe from malaria, in a malarial country, that does not sleep under a mosquito canopy. It should also be remembered that the insects can bite through the netting if any portion of the body is in contact with the net. The net should, therefore, be large enough to insure against such an accident. All these little points may seem trivial, but it is the lack of observing them that is the cause of many a case of malaria among families who honestly think they are taking every precaution against the infection, and gives the sceptic ground for scorning the preventive measures taken by his neighbors who believe in doing everything possible to prevent the disease.

There is little doubt that a great deal of malaria results from the careless use of the canopy. It should be borne in mind that the slightest tear will allow the ingress of the insect intent on a meal of fresh blood, so that it is very important that a careful inspection be made of the canopies in use. A most important point is the manner in which the net is hung. It is a common occurrence to see them hanging in such a manner that the edges are several inches from the floor, this allowing a point of entering. They should reach the floor and be weighted in such a manner as not to allow draughts to raise them from the floor. It is not uncommon to find that the canopies are not lowered until the hour of retiring. This often results in shutting in within the canopy stray mosquitoes that may be in the room. To avoid this all canopies should be either put down when the bedroom work is completed or else lowered early in the afternoon before any mos-

quitoes are flying around. It is this attention to detail that will keep one free from malarial infection, for the slogan of the individual aiming at this exemption should be: "Protect yourself from the bites of mosquitoes between the hours of sundown and sunrise."

NOTE—The foregoing article has been contributed by Dr. G. E. Henson, who, while not connected with the State Board of Health, has given very generously of his time to the public health, and particularly to malaria.—Ed.

HYDROPHOBIA IN FLORIDA.

Rabies, which among human beings is commonly called hydrophobia, is a disease that prevails in Florida because laws are not enforced. It might be eradicated if the authorities would perform their duties, and probably this would be accomplished if a strong public sentiment demanded it. But the citizens of the State are indifferent, and they pay the penalty. They pay it with the sacrifice of several human lives each year and with \$20,000 or \$30,000, perhaps more, of good money.

Take the records for the past two years in Florida—1911 and 1912—and they show that the State Board of Health had official information of 115 cases in 1911 and 114 in 1912. There were four deaths each year. The cost of the Pasteur treatment administered through the Board was \$1,150 in 1911 and \$2,052.90 in 1912, and these figures do not include the expenses of patients who went at their own cost to the Pasteur sanitariums at Atlanta and elsewhere. It does not include the much larger cost in the loss of valuable animals, dogs, horses, mules and cattle—for any and all of the domestic animals may have it. It is impossible to gather accurate figures of this loss for the entire State, but in Duval county alone it ran above \$15,000 last year.

Rabies is a disease that exists in every season. Summer heat or winter cold makes no difference. It exists in every part of Florida. Examining the records of the State Board of Health for 1912, as of a typical year (although statistics show that the disease is increasing and not diminishing from year to year), it is found that cases were reported from twenty-one of the forty-eight counties of the State. Of the 114 cases, 48 occurred in Jacksonville; 30 in Hillsborough county (29 of them in Tampa), and six in St. Augustine, while the remaining 30 cases were scattered through 18 counties, none of which contained any large cities. Strangely enough, no cases were reported from Pensacola or Key West. This might be explained by the isolation of the

latter city from the mainland of the State, and by the enforcement of law in the former.

Ninety-four cases observed by the Board were of white patients, and twenty of colored persons. Sixty-three were persons over fifteen years old, and fifty-one under that age. Ninety-four were bitten by dogs, ten by cats, one was licked in the mouth by a dog that afterward became rabid; three caught the disease by coming in contact with the saliva of a cow supposed to be sick, but which later developed rabies; one got it from the saliva of a rabid calf, and one was exposed to the saliva from a rabid horse.

Each of these facts has its significance. It appears that the disease prevails more generally in the cities, in the thickly settled sections, than in the rural districts.

While dogs are the principal source of the infection, several other animals have become dangerous.

The doctors don't know everything about the disease. They are studying it constantly for the benefit of humanity, and they have found that the Pasteur treatment, when taken in time and administered faithfully, is a practically sure cure. There are a few basic facts that everybody ought to know.

Rabies is probably a germ disease, for in every post-mortem examination are found what are known as the Negri bodies, so called from Prof. Negri, of Pavia University, Germany, who identified them in 1903. The disease is communicated through the saliva of infected animals containing these bodies. These are carried through the circulatory system and affect the nerve system, of which the brain is the center. They are found developed to the greatest numbers in the large ganglion cells of the brain. The reflex action on the body is to paralyze the natural functions, particularly of the heart and lungs, so that the patient, unattended, may die of irregular heart action or of strangulation, through a paralysis of the muscles of these organs. So far as has been observed, the digestive system is affected only in sympathy with other affected parts. The patient is thrown into a highly nervous condition; his mentality is rendered abnormally sensitive to outward impressions. As a consequence, his mental suffering is intensified, and death from this disease is the most horrible known to the medical profession.

The aversion to water, which is commonly supposed to be a distinctive feature of rabies, is caused not by a distaste for the fluid, but

by the agony of the attempt to swallow, caused by the paralysis of the throat muscles.

The disease may be communicated to human beings and to all domestic animals, as has already been noted. It may be communicated also to wild animals, and there is some evidence that this has already occurred in Florida. The wild wolves on the vast plains of Russia have become infected and have become a serious menace in the sparsely-settled sections of that country. It is possible in Florida.

The conclusion from observed and proven facts warrants the statement that the disease can be stamped out in the State. Once this has been accomplished, it cannot be revived excepting by importation from other States and sections.

There is just one way to stamp it out, and that is to enforce the laws regarding dogs, for it is perpetuated through dogs. First, insist that every owner of a dog shall pay a license for that dog. Second, insist that every dog allowed to run at large shall be effectively muzzled.

That's all, excepting to insist that city and town and county authorities charged with the enforcement of these laws shall do their duties or give place to those who will.

A good many dogs are not worth the license fee, and the license tag should be the permit for every canine to live. If necessary, extend the operation of these laws to cats—and cats are a nuisance in other ways besides this.

Good lawyers declare that the municipality or county having such laws is liable for damages resulting from the non-enforcement of these laws. But why wait for such action? Why should such sacrifices be necessary to arouse public sentiment, when an evident danger of such seriousness constantly menaces the people in every community in Florida?—*Press Service, State Board of Health.*

SPEAKING OF SMALLPOX.

The office has just had report of a young white man at Ocala who died of hemorrhagic smallpox. Hemorrhagic smallpox is different from ordinary smallpox only in severity, that is to say, a person may contract hemorrhagic smallpox from the common kind, and vice versa. It is generally known that a person has a rise of temperature, headache, backache, etc., two or three days before eruption of smallpox. In hemorrhagic smallpox the eruption never forms, but instead, hemorrhages occur under the skin, mottling it with black and blue patches

which may completely cover the body. In this state the patient dies very promptly; there are no recoveries from hemorrhagic smallpox. It is sometimes called "black smallpox," just as hemorrhagic measles is called "black measles." Scarlet fever may also be so malignant as to be hemorrhagic, and epidemic cerebro-spinal meningitis is sometimes called "spotted fever," from the fact that in a large number of cases of that disease these little hemorrhages occur under the skin. The young man in question had never been vaccinated.

Quite recently a Greek woman in Jacksonville, who did not speak English, broke out with an eruption. The attending physician thought that it was chicken pox, but admitted it might be smallpox. Another physician saw it, and thought it was smallpox, but admitted it might be chicken pox. The State Board of Health was called upon to pass final judgment. The eruption in question was of "borderland" type, which defies absolute diagnosis. While conducting the examination, a little daughter of the woman about ten years old acted as interpreter. Inquiry was made as to whether the mother had ever been vaccinated. It was found that she had been vaccinated many years ago, but the scar was very atypical, almost faded out. There was reasonable doubt as to whether the vaccination had ever been successful. While talking with the little girl it was discovered that she had a little pustule in her eyebrow. Further inquiry revealed the fact that she had this eruption also. The eruption on the shoulders and chest were fairly profuse. She developed it about the same time that the mother did, but she had so little in the face that it had not before attracted attention. Upon being asked if she was vaccinated, it was found that she was recently, and had a typical vaccination scar. This showed it was not smallpox, but chickenpox, and the diagnosis was established. It will be noted in this connection that the diagnosis was based upon the vaccination history rather than upon the character of the eruption for the symptoms of the disease. A diagnosis of this kind is absolutely reliable.

The following is a condensation of the work of the Board for the month of February, which will be of interest to the public:

During February smallpox was reported from sixteen counties, viz.: Alachua, 17 cases; Bradford, 1; Dade, 1; Duval, 25; Escambia, 137; Hillsboro, 1; Leon, 4; Levy, 10; Madison, 1; Manatee, 6; Marion,

1; Nassau, 1; Putnam, 1; Santa Rosa, 2; St. Johns 2; Taylor, 1; a total of 211 cases for the State.

The cost of vaccine distributed during February was \$171.925. Twenty-five hundred points of vaccine were purchased during the month, and 2,645 points distributed in 23 counties.

The number of persons taking anti-rabic treatment in February was ten, of which three were treated at the expense of the State. The sum paid by the State Board of Health for treatment of indigent cases against hydrophobia in February was \$100.00.

During February the Board paid for diphtheria antitoxin given to the indigent in the State, in the amount of \$42.80.

There were no applications received for relief of crippled children under the State fund during February.

No publications were issued by the State Board of Health in February, but a quantity of reprints from the Southern Medical Journal, entitled "Some Things That People Should and Should Not Forget," by Dr. Joseph Y. Porter, were received for distribution.

During February applications were received and hog cholera serum distributed to the amount of 26,000 c. c. Of this, reports were received of 13,475 c. c. being administered to 535 hogs, total weight of which was 38,760 pounds; 25,000 c. c. of hog cholera serum was purchased during February, at a cost of \$375.00; 15,000 c. c. of serum was on hand March 1st. No hog cholera agents were appointed during the month, but requests for serum were received from four unrecorded owners. Total number of hog raisers recorded as applying serum on March 1 was 28, and the number of hog cholera agents numbered 104. Total amount of serum on hand by agents and owners on March 1st was 92,640 c. c. One thousand c. c. of serum was destroyed in transit, and claim instituted.

There were four cases of glanders reported in the State in February. Three hundred and seventy-five dollars was paid by the Board as reimbursement for glandered animals killed by order of the Board during February.

On February 9th the Alachua County Live Stock Club was organized, with a membership of 20. February 11th the State Board of Health, in annual session, authorized an expenditure up to \$5,000 for cattle tick eradication in Florida for the year 1913. On February 14th, on recommendation of Dr. C. F. Dawson, veterinarian of the State Board of Health, that in all counties where clubs are organized for tick eradication, the State assume the expense of erection of vat

for demonstration purposes with reports of demonstrations and activities in this line, was adopted by the State Board of Health. On February 22d the first cattle dipping demonstration in Florida was held at the farm of Hon. C. F. Barber, at Macclenny, where vat had been installed. One hundred and fifty animals were dipped before an assemblage of one hundred people. Speeches were made and the event published.

During February the number of pieces outgoing mail was 550, first class; 136 for all other mail—total, 686 pieces, the postage of which was \$15.70.

Two thousand eight hundred and twenty-three pieces of literature were distributed during February in 24 counties by the Board.

A HOME SNUGGERY.

There should always be one spot in the home sacred to the best interests of the family. A room full of comfort, where the sofa is made to lounge on, and the chairs to tilt back, and the carpet to dig the toes in; where bills and bickerings are alike forbidden, and the straightlaced propriety of the dining room or parlor can be abandoned for romps and story telling; where the dust doesn't show and nothing is too fine to use, and at whose door all the burdens drop off as they will some time at the gate of heaven—a room whose speech is silver and whose silence is golden—where the tranquility of a summer Sabbath is broken only by sweet murmurs of love and confidence, where a happy cat curls herself to repose in blissful affinity with the peaceful house dog, a place where the wicked cease from troubling and the weary are at rest. A sort of moral lean-to which adjoins the house-beautiful. Here Jacob's ladder is planted, and the angels descending, bring with them endless measures of peace.

Every home should have this one place of retreat.

It is no impossible place. Love is the architect; content its atmosphere. We find it in our friends' homes, often, where least expected, and are surprised because it is never a show place. It is simply a golden room in a wooden house.—*Palm Beach Weekly News*.

JAP BAKER'S SIGN.

The oriental capacity for using our mother tongue with strange twists of unconscious humor is well known, but few examples are equal to this delicious sign on a Japanese baker's shop: "A. Karin-ura, Biggest Loafer in Tokyo."—*Oriental Review*.

NOTICE---EMBALMER'S EXAMINATION.

Friday, May 16th, Jacksonville, Fla., offices State Board of Health.

HOUSEHOLD CLEANLINESS AND YAWS.

We have with us some of the tropical diseases, but not all, thanks be. Yaws, for example. A recent trip to Jamaica emphasizes how grateful we ought to be for that. The disease is quite prevalent there. Not so much in Kingston, but in the poorer suburbs, and in the country. The natives believe they have to have it and make no provision against it. In fact, they treat it like measles—try to get it while they are young and have done with it.

As a matter of fact they need not have it at all. Few Europeans or Americans, even where the disease is most prevalent, ever contract it. For a while it was not known why, but now that is pretty well understood. The disease is transmitted by bed bugs. Those who live in environments that do not harbor bed bugs don't get yaws.

It is hard to imagine a more loathsome disease than yaws. It consists of ulcers, which may be sprinkled over the entire body, or may be confined to some particular area. These ulcers may be many or few. At best they last for several weeks, and may last for months or even years.

They are seen mostly in children, because one attack confers immunity. When children have them and get well, they rarely have the disease a second time. But they are not confined to children. Any age may become infected.

The eternal lesson taught by this disease is that household cleanliness prevents it.

COULDN'T RECIPROCATE.

A Scottish farmer was asked to the funeral of a neighbor's wife, and as he had attended the funeral of both of her predecessors, his own wife was rather surprised when he informed her that he had declined the invitation.

For some time Sandy would give no reason for the refusal, but he could not stand the old lady off, so finally he told her with some hesitation:

"Weel, ye see, Janet, I dinna aye like to be acceptin' ither folks' civilities when I niver hae anything o' the kin' to offer in return."—*Exchange.*

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Any information you want about communicable diseases of domestic animals we will help you to get.

Address communications to Jacksonville, Fla.

MOSQUITOES.

To the casual observer all mosquitoes look alike, but a more intimate acquaintance reveals some very striking differences both in structure and habits. Some are beautifully marked with white or yellow stripes and bands, some with purple and scarlet, while some are of more somber hues. Some have long slender legs, others short and stout. The legs of some are smooth, while others are beset with erect scales. Some have toothed tarsal claws, while others are toothless. Some do not bite at all. Some bite chiefly at night, some chiefly in the day, whereas some bite day and night. Some pass the winter in the adult and some in the egg stage. Some deposit their eggs on the water; others deposit them on the grass or mud, where water is expected to be after heavy rains or high tides. Some lay their eggs singly; others join them together into little batches, or boats. Some breed only in fresh water; others only in salt or brackish water. Some prefer clean water; others filthy. Some are migratory; others are not. Some transmit one kind of disease, others another, while yet others are innocent altogether. Although there are many differences, there are also many likenesses, and it is these likenesses and differences that enable them to be grouped together and labeled. All mosquitoes that are alike in certain fundamental respects are grouped together as a genus, but among the mosquitoes thus grouped together will be found certain minor differences. The mosquitoes that are alike even down to minor points are grouped together as a species. When speaking or writing of mosquitoes, as with animals or plants, it is necessary to give both the genus and the species, just as we expect John Smith to give both surname and individual name jointly. To illustrate: The *Anopheles* have long palpi in both sexes, and the larvæ have short breathing tubes. So far they are alike, but one kind of *Anopheles* has three black spots on the scales of the last vein of the wing; also white bands across the palpi. This is the species *crucians*, and is spoken of as the *Anopheles crucians*. Another *Anopheles* has white feet. This species is known as the *Anopheles argyritarsis*.

NAMING SPECIES.

It is an unwritten law among naturalists that the first who finds or describes a species names it. Frequently two or more naturalists in different parts of the world describe the same species, each naming it and each giving it a different name, and later it is found they both mean the same thing. When this occurs, the species is known by the name given first, and the other names are given as synonyms,

e. g., a certain mosquito of the genus *Anopheles* was described by Meigen and called *Anopheles maculipennis*. The same mosquito was described by Say and called *Anopheles quadrimaculatus*. It is now known as *Anopheles maculipennis*, Meigen, the other name, *Anopheles quadrimaculatus*, Say, being used as a synonym, and the author's name appended in each instance to avoid confusion.

KINDS (SPECIES).

Just how many kinds of mosquitoes there are in the world nobody knows; no one will ever know, perhaps. Distributed over the world as they are, there are large areas in which the mosquito fauna is not known, and will not be for years to come. Writing ten years ago, Lieutenant Colonel Geo. M. Giles, whose validity is hardly likely to be questioned, says: "We have at least three hundred species." Three years later, F. V. Theobald, who is one of the greatest living authorities on mosquitoes, stated the number of species "will not stop short of a thousand*". In the State of Florida we have about thirty known species. There may be others; probably are. We have a large territory, though not very diverse conditions, and it is not likely that the limited amount of work that has been done has unearthed them all by any means.

GENERA.

The number of genera into which mosquitoes have been grouped is about fifty. We have found in our State representatives of about a dozen of these. The *Culex* includes about as many species as all the other genera together, more than 160 already being known. And if any genus may be regarded as the type from which others have diverged, the *Culex* has a very strong claim for that distinction. Selecting, then, the *Culex pipiens* as type of this typical genus, the life cycle is briefly as follows:

WIGGLERS.

Mosquitoes pass through four stages of development—egg, larva, imago, and fullgrown mosquito. However the eggs may be laid, they hatch only in water; the wiggler and pupa pass their entire existence in water, leaving it only when the imago emerges from the pupa skin. From this it will appear that mosquitoes cannot breed except in water.

Though the wiggler lives in water, he is a true air-breather. Respiration is carried on by means of a respiratory siphon situated on the dorsal aspect of the last abdominal segment—a breathing tube

*NOTE.—Animal Parasites of Man, by Braun.

near the end of his "tail." When at rest he floats at the surface, head downward, his breathing tube thrust out of the water. If disturbed, he quickly darts downward, but soon returns to breathe again.

Frequently he may be seen feeding at the surface, and actively turning his head and body this way and that, but always with his breathing tube thrust into the air. At other times he goes down to feed, and may be seen mouthing over dirt, leaves, grass, or whatever happens to be in the water. His food consists of diatoms, desmids, spores of minute vegetable organisms and minute animal life. He is a very voracious eater, and when food is scarce he will, in some species, eat other wigglers.

He grows fast or slow, according to the abundance of food at his command, the temperature of the water he lives in, etc. In about a week, under ordinary conditions, he is grown, having moulted several times in the interim. He is now ready to change his skin once more, and out comes the pupa.

PUPAE.

The pupa looks something like the mosquito with his head, wings, thorax, and legs all in a bag. With the change of state his habits also change. He doesn't grow any more, neither does he eat. His breathing is changed so that now it is through two little trumpet-shaped tubes that grow out from the thorax. His body seems to have become lighter. He quietly floats at the surface, except when disturbed. At such times he darts downward, but it is only by effort that he remains below the surface.

HATCHING.

After remaining in the pupa stage from sixteen hours to three or four days, he bursts his skin on the back of the thorax and out comes the full-grown mosquito. During the hatching, which takes place in the water, the pupa skin serves as a boat to keep the emerging mosquito from drowning.

If he passes this milestone safely, he unfolds his legs, rests a bit, spreads his wings and flies away.

MATING.

Late in the afternoon of the spring and summer, you may see large swarms of insects rapidly dancing among one another and keeping about six feet above the ground. If you walk after them, they will move before you, keeping about one step ahead. If you turn and walk the other way, they will get in front of you again. If you pass your hand rapidly among them, they will disperse for the moment,

but in a few seconds will be reassembled. I have made a quick swoop with an insect net and caught a score. Examining them, it is found that they are mosquitoes—our common rain barrel mosquitoes—the *Culex pipiens*. And what is more, they are all males. This is apparently a “bachelor party.” But what is the explanation? If you watch them closely, you will see, every few seconds, if the swarm is large, two mosquitoes clasp and soar away. If you capture these, you will find that it is male and female. It is the nuptial flight. The bachelors, so to speak, are being auctioned off. But why do the bachelors congregate preparatory to this wedding feast? Why do they seek human audience? Why this particular hour? this particular height above the ground?

Where the *Stegomyia calopus* are abundant, it is easy to be a guest at the wedding. Better choose a porch, preferably screened with vines, such as lovers like, where the light is subdued. The best hour is about the time the school bell rings, though a little earlier, or a little later or even in the afternoon, will do. Then keep still, for these denizens of the smaller world are very shy.

It has been stated on good authority that the *Anopheles*, at least in common with most insects, mate only once in life; that the males don't live long afterwards, and that the females are ever afterwards fertile. But Mitchell is authority for the fact that the *Stegomyia calopus* is very fickle.

DISTRIBUTION.

With the possible exception of a few uninhabited or almost uninhabited islands, mosquitoes are to be found in all parts of the world. They seem to be more prevalent in the extreme northern latitudes and in the tropics; less so in the temperate regions. The reason for this is apparently one of development of natural resources of the country. The temperate regions, not too cold in winter, not too hot in summer, have been first to attract men, and it is there that possibilities of the soil and of the streams have been developed to the highest point. It is there that drainage has been completest, the density of population having made imperative the utilization of the land and of the water, whereas the development of the far northern and of the tropical countries has not kept pace. We have every assurance that mosquitoes abound in Alaska, sometimes in inconceivable numbers. It is stated on good authority that they attack the polar bear with such ferocity as to even result in his death. In Lapland the herds often stampede on account of this veritable pest. It goes without

saying that the same kind of mosquitoes are not distributed all over the earth, but in some instances an individual species may have a very wide range of distribution. The *Culex impiger*, for example, has been reported both from Alaska and from Florida. In Florida, which is practically all in the humid division of the lower Austral life zone, there are probably no places entirely destitute of mosquitoes, only a few species, however, that are so cosmopolitan as to be found all over the State. The *Stegomyia calopus*, or yellow fever carrier, is so universally distributed that it is certain that there is no place within our bounds in which it does not breed, or would not, with facility, if given proper conditions. The *Culex pipiens*, or common house mosquito, is another cosmopolitan pest. Probably we have no other species so widely distributed as these two.

BITING APPARATUS.

The biting apparatus of the female mosquito consists of seven parts. Beginning in the center there is a little tube which is the tongue. This tube lays in a gutter, and that makes two canals, one just above the other, one running through the tube and one just under it, in the gutter. Ranging around this are four lancets, making six of the seven parts, and wrapped around the whole is an outer tube, which completes the biting machinery.

In the act of biting, all is inserted except this outer tube, which is ingeniously arranged for slipping back. This tube is split right on top, but not all the way down to the end. In the act of biting, all the biting parts are thrust into the skin, the little unsplit portion at the end of the tube keeping around the rest like a ring, and the split portion in the middle of the tube doubling back upon itself in an acute angle until the inner parts are inserted their entire length. The two canals mentioned are specially important features. One of them communicates directly with the salivary glands and the other with the stomach. In the act of biting, saliva is flowing out through one of the canals, while blood is flowing in through the other.

BITING HABITS.

Male mosquitoes do not bite—only the females do. There are probably some rare exceptions to this, but in a general way it is true.

The females do not generally bite till after they have mated. There are some very definite exceptions to this. Among the salt marsh breeders, for example, it is the sexually immature females, the neuters, so to speak, that are most conspicuous for their ferocity.

But among the fresh water breeders there are no neuters, and the females generally refuse to bite till after they have mated.

Each species has its own biting habits. The *Culex pipiens* bites only in the night, at any hour between dark and dawn. The *Anopheles* bite mostly in the early part of the night. They sometimes, though rarely, bite in daylight. On one occasion I saw an *Anopheles crucians* bite on a railroad train about ten o'clock in the morning. Another time I saw one bite in the early afternoon. But this is rare, and is an important point, for it is this nocturnal habit that enables people to protect themselves against it.

There are other species that bite only in the day time. The *Janthinasania musica*, I think, is one of these. Certainly the *Stegomyia calopus* is one. In 1905 the author published the following note concerning the biting habits of this mosquito:

Next to knowing at sight the mosquito himself, nothing is more important than to know the biting habits of the *Stegomyia fasciata*. I have seen very little literature upon this particular phase of mosquito lore, and that little is contradictory, part claiming that he bites chiefly in the day time, and part that he is of purely nocturnal habits. It is the purpose of this article, therefore, to state the conditions under which he bites and does not bite, as I have observed them myself, and to interpret certain well known phenomena.

Only the females bite and these not until after they have mated. Having once mated they are always fertile, and, though they may deposit during life several litters of eggs, they do not need to mate a second time.

After mating the females go in quest of blood. When they bite they fill the stomach very full. They will not bite any more now until that is all digested. This takes two or three days when the weather is warm, but when it is cool the vital processes are a little slower, and it takes somewhat longer.

The *Stegomyia calopus* have two daily mating periods; one in the morning, which lasts from early dawn till nine or ten o'clock, and one in the afternoon, which lasts from four or five o'clock till dark. More mate in the morning than do in the afternoon. They occasionally mate at all hours of the day, particularly if it be cloudy and still.

They begin biting also at early dawn and by nine or ten o'clock the biting has reached its height. So it continues till they have become satiated or till the afternoon draws on. After five or six o'clock the biting subsides in a measure, but does not completely cease till night. If they ever bite in the dark it is the rarest exception. It is to be added just here that during the noon hours of our hottest and brightest days the biting subsides a little.

And though they bite only in the day, they assiduously avoid sunlight. I doubt if one ever makes an attack, no matter how hungry,

where the sun is shining, or even ventures into sunlight when it can be avoided. If taken into the sun in captivity, they become restless. Even in the wiggler and pupa stages they seek the shadiest part of the vessel. Not only do they avoid the direct light of the sun, but also avoid bright sky-light, creeping up insidiously on the shaded side, when they go to make an attack.

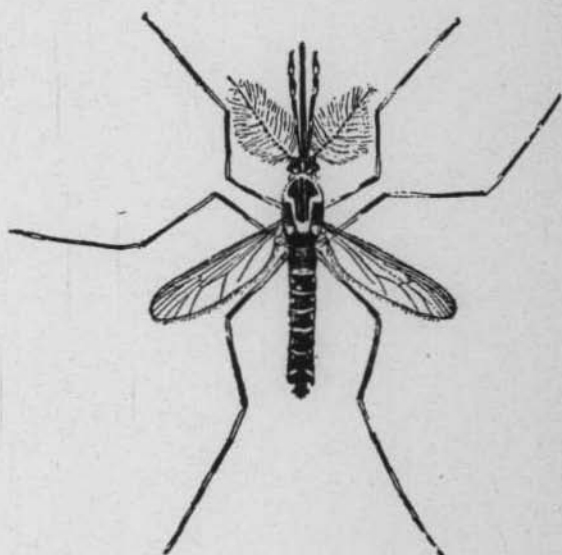
They likewise avoid the wind, seldom attacking even in a moderate breeze and then always on the leeward side.

They are also shy of motion—easily driven away but persistent to return.

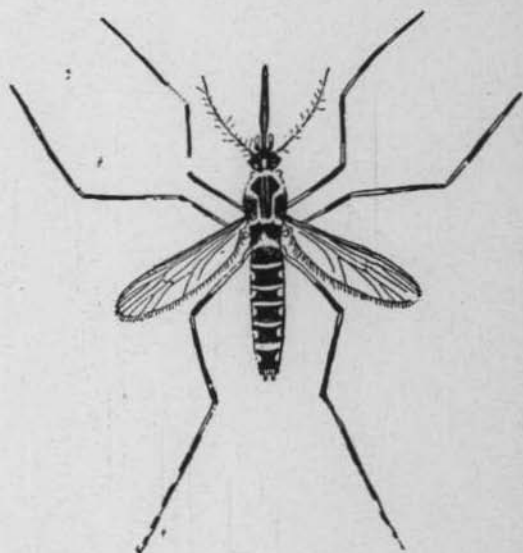
Upon the whole, the *Stegomyia calopus* is the most wary mosquito with which I am familiar. Choosing his point of attack, as before stated, on the shaded side, he carefully reconnoitres the grounds, apparently weighing the chances of trouble against the delights of the feast, before he ventures to light. And finally when he does light, he does not proceed at once to bite, but waits, watching, to see if he is observed. During this waiting, watching, his hind legs slowly curl back and forth over his back. At this time he is most difficult to capture. Finally, when he considers all safe, he begins feeling around with his proboscis for a suitable place to make the puncture. Then he stops again and watches, then proceeds again. The least movement on the part of the victim will frighten him away instantly.

Now, it is a well known fact that during an epidemic of yellow fever, people may visit the stricken city in the day time and by leaving before night, enjoy a relative safety. These two facts seem to contradict each other, for if the mosquitoes bite in the day time instead of the night, how is it that one takes less risk going into an infected territory in the day time than he does to spend the night there? To answer this perfectly rational inquiry requires that several things be borne in mind, not only concerning the mosquito's habits, but the individual as well. As a rule only men take such risks. They take their families away and keep them away. They, too, stay away at night. They go to town in the day to attend to business, but leave again with the greater possible despatch. Most men smoke. Especially is this true in the presence of disease. Smoking helps to keep the mosquitoes away. They attend to business in a hurry. This keeps them on the move. It has been pointed out above that the *Stegomyia calopus* will be frightened away by the least motion. A good portion of the man's time is spent in the open air—the breeze is protective. And while in the sunshine they are practically safe, for, as has been seen above, the *Stegomyia calopus* avoids sunlight. Furthermore, when a man voluntarily takes such chances on account of business interests, he keeps as well out of the infected district as possible. Now with all these factors working in his favor the chances are that he will escape, but occasionally he is overtaken in spite of them all.

On the other hand, an individual spending the night in infected territory takes great risk, because the mosquito bites until night and begins early in the morning, and the sunlight, which is a restraining



STEGOMYIA CALOPUS. MEIG. AFTER HOWARD. (MALE.)



STEGOMYIA CALOPUS. MEIG. AFTER HOWARD. (FEMALE.)

The following or opposite figures, represent the life history of the malarial parasite:

It will be noticed first of all that there are two circles. The upper circle is the history of the germ as it passes through the mosquito. The lower circle is the history passing through the human.

Beginning with number 1, on the left, the mosquito is biting a human being and injecting one or more malarial parasites.

Figure 2 is a red blood cell in this person that is being bitten, with the parasite just entering it.

Figure 3 is the same blood cell with the parasite embedded in the center and growing.

Figure 4 is a little later stage of the same cell.

Figure 5 is the same cell with the parasite breaking up into eight segments.

Figure 6 is the cell breaking down and setting free in the blood a number of young parasites. (Note: This is a crucial point in the cycle. The parasites set free here are of three kinds: male, female and neuter. All three kinds enter other blood cells as the parent did. We will consider the neuter first).

Figure 7. It is entering a new blood cell. It then repeats the cycle that its parent did, Figures 3, 4, 5, 6 and 7, again. When this breaking down takes place, as in Figure 6, it is called *sporulation*. It is here that the patient has the chill. It happens (tertian malaria) every 48 hours.

We will now leave this neuter form of parasite and follow the cycle of sexual forms, represented by Figures 8, 9, 10 and 11. They grow, that is, the sexual forms, enter other blood cells as the neuters do, but do not break down. They remain dormant in the blood cells that they occupy.

Figure 12 is the female form, and

Figure 13 the male form.

Figure 14 represents a mosquito biting a person infected with malaria and getting some of these male and female forms into his body. Now we go through the other circle, the one that takes place in the body of the mosquito.

Figure 15 is a female form in the stomach of a mosquito and

Figure 16, a male form. The three little whip-like projections on Figure 16 break off in the stomach of the mosquito, and one of them is seen to be swimming along in

Figure 17.

In Figure 18 it is penetrating a female form, which is now fertilized, as in

Figure 19.

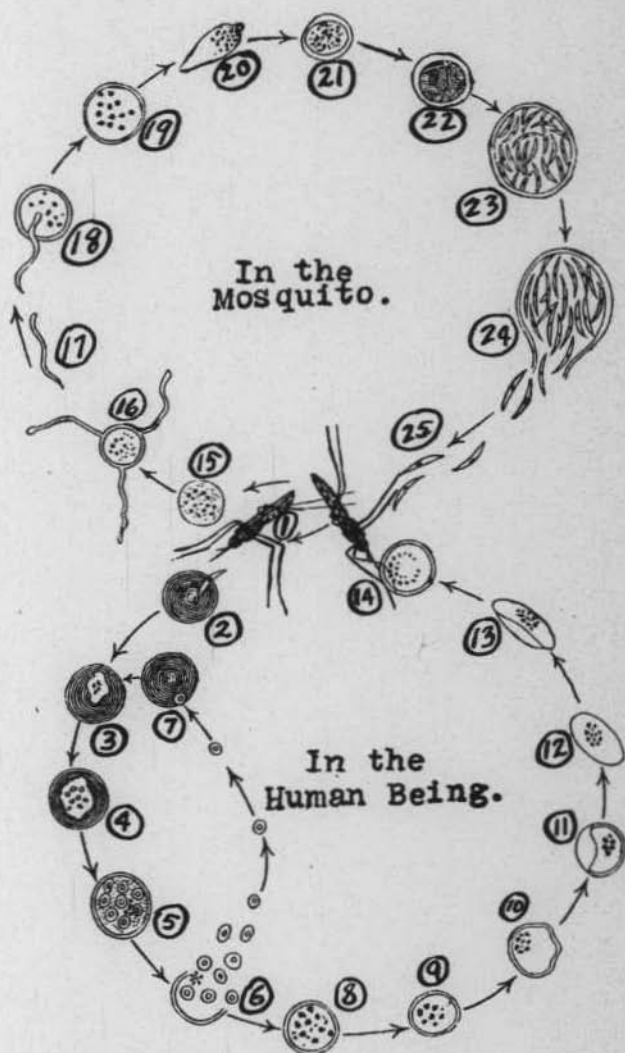
In figure 20 this female form is called a *zygote*. It now bores through the stomach wall of the mosquito and becomes embedded.

Through Figures 21, 22 and 23, it is making preparation to break down in the body cavity of the mosquito.

In Figure 24 this breaking down takes place and a large number of tiny little organisms are set free, as in

Figure 25.

They are excreted by the saliva of the mosquito, which is now infected, and when he bites, as in Figure 1, some of them are injected and a new case of malaria is started.



ADAPTED FROM PLATE ISSUED BY SANIDAD Y BENEFICENCIA, CUBA.

influence, is wanting in the evening; and the mosquito is active long before the individual wakes in the morning. Indeed it is not unlikely that more infections take place at this early hour than any other time of the day. At that time there is usually a dead calm and the light is not too severe, and the slumberer lies motionless—the happiest combination conceivable for the fastidious habits of the yellow-fever carrier.

Certain other species bite day and night. This is particularly true of our salt-marsh breeders. The ferocity of these has never been overdrawn. They seem totally devoid of fear and always bent on biting. They will bite in captivity as voraciously as when free if only given a chance. I have seen them bite when three of their six legs were gone. The *Psorophora ciliata* also bites day and night. This is the largest species we have, some specimens measuring over an inch from head to tail. The author has seen him bite through a kid glove.

HOW MOSQUITOES TRANSMIT MALARIA.

Everyone knows now that the mosquitoes of the genus *Anopheles* are responsible for the transmission of malaria. But just how it is done is not so generally understood. Briefly, the process is as follows: The hematozoon of malaria develops in the red blood cell, feeding on its contents and growing just as any other organism would feed and grow. If you can imagine a worm in the heart of an apple, eating and growing till the apple is only a shell and the worm fills it up, you will have a similar process. If you can imagine the worm breaking into ten to thirty pieces, and each piece entering another apple, and living and feeding and growing as the first one did, you will still be following the process. When the hematozoon grows till it fills the corpuscle—when it is grown—it breaks into a variable number of pieces or segments, and the process of breaking out of the old shell and getting into the new is called sporulation. It is at this juncture that the patient has the chill. In tertian fever this sporulation takes place every forty-eight hours. In another two days they are grown and sporulate again, and another chill, and so on. From this it will be seen that if a patient has two crops maturing on different days, he will have a chill every day—a double infection.

It will be noticed that the above method of reproduction is without sex. Each individual germ, independent of every other, produces ten to thirty of its kind by breaking into so many segments. This asexual method of reproduction has for its object the increasing of the number of individuals. It prevails to a greater or less degree in all the lower animals and plants. But the malarial parasite, in common with many

other organisms, has another means of reproducing—a sexual method. It is this sexual method that continues the story.

When the hematozoon growing in the red blood cell reaches maturity and sporulates, as before said, it breaks into ten to thirty segments. Now these segments are of three kinds, namely, male, female, and the asexual forms that go on reproducing in the blood. As we have already seen what the asexual forms do, it now remains to see what becomes of the sexual forms—male and female. When sporulation takes place and all three forms are set free in the plasma of the blood, the sexual forms, like the asexual, proceed to enter other blood cells and feed and grow. But they do not sporulate. Their function is to disseminate their kind, to reach other hosts. And as they have adopted the mosquito as their intermediate host, they lie dormant till taken into the mosquito's stomach. Now when an *Anopheles* bites an individual thus infected with malaria, he takes into his stomach a great number of red blood cells. Some of these contain no germs at all, some contain the asexual, and some the sexual, both male and female. The blood cells are digested. So also the asexual germs. Not so the sexual. Instead they proceed to unite, the males with the females—to mate, if you please. In this act of conjugating the male and female elements fuse together, making a new body. This body now penetrates the stomach wall of the mosquito and here becomes embedded, forming a minute tubercle. By and by this tubercle breaks down, setting free in the body cavity of the mosquito a host of minute organisms, called sporozoites. These get into the salivary glands of the insect, and when the mosquito bites another individual some of them are injected and proceed to enter red blood cells and grow and reproduce, and the story is repeated.

MOSQUITOES AND OTHER DISEASES.

As before said, it is well known that mosquitoes transmit malaria and yellow fever. It is equally well known that they transmit the *Filaria sanguinis hominis*. They are also accused of transmitting the specific cause of dengue. Among the lower animals they transmit a disease of swallows similar to malaria. It is thought also that they transmit a certain dog disease of the hematozoon class. And it is altogether probable that diseases among cold-blooded animals may prove to be transmitted in the same way. There is an infinity of investigating yet to be done along these lines.

HOW MOSQUITOES PASS THE WINTER.

Some species, as our salt-marsh breeders, pass the winter in the egg stage, the adults dying when the weather gets cold, but leaving a bountiful supply of eggs deposited in the marshes ready to hatch out when the spring rains come. Others, as the *Anopheles*, pass the winter as adults. In the colder latitudes, with the advent of winter, the gravid females seek shelter in closets, cellars, barns, and other protected places, and go to sleep. When the warmth of spring returns, they wake up and set about repeopling the mosquito world. But I am convinced that the commoner species rarely, if ever, hibernate in this State—especially the southern part. During the winter of 1905 I found them out, not only through the winter months, but during the coldest of the weather. On two successive nights the thermometer went to 20 degrees Fahrenheit, and on the intervening day my wife captured a large active specimen of *Anopheles crucians*. The thermometer then stood about 35 degrees Fahrenheit. During the same cold spell I captured several other specimens of *Anopheles*, as well as *Stegomyia fasciata* and *Culex pipiens*. It is true they were not so abundant as when the weather was warm, nor were they so active, and if the temperature had remained low for any length of time they would, in all probability, have gone into hibernation. I also found active *Culex* wigglers in January, but was not privileged to see them hatch. But on February 13 I found grown *Culex* wigglers which were collected and hatched in breeding jars.

HOW FAR DO MOSQUITOES FLY?

It has been definitely settled by Dr. John B. Smith, of New Jersey, that our two salt-marsh breeders are migratory, that they will fly 20 miles or less from their breeding places. Whether there are other species that migrate is yet to be determined, but it is certain that most of our commoner species are of very local habits, seldom flying more than a few hundred feet or yards at most from where they hatch. It is very important, therefore, for exterminating purposes, to determine just what species we have to contend with and how far they fly, for it is evident that in order to clear any given community of mosquitoes they must not be allowed to breed within a radius equal to the distance they may fly.

HOW LONG DO MOSQUITOES LIVE?

"How long do mosquitoes live?" is a question often asked. It is not easy to answer, for the reason that, in confinement, they may not live their allotted time. And the span of life is probably greater in

some species than others. The *Stegomyia fasciatus* has been kept alive for five months. So has the *Culex*. Mr. Smith thinks that the average life of our commoner Culices is some three or four weeks, and that *Anopheles* live somewhat longer. It is certain that they live long enough to reproduce their offspring, and that they breed fast enough to maintain the abundance, and that they bite often enough to transmit disease. And these are, after all, the vital facts.

NATURAL ENEMIES.

Mosquitoes, like most other insects, and, indeed, most of the lower organisms, reproduce very rapidly and would, if unchecked, overrun the earth in a very little while. But nature provides checks and counter-checks for such rapid multiplication. Whether there are any creatures that prey upon the eggs or not, it is certain that a large per cent. of them never hatch. In the larval or wiggler stage they have many enemies. Minnows eat them, the larvae of dragonflies and beetles eat them, disease attacks them, fungi get on them and kill them; they die for lack of food, they sometimes eat one another, they get entangled in threads of spirogyra or under floating leaves and drown. The water dries up before they are grown and millions of them perish in this way. Finally, when they are ready to emerge from the pupa, the cast-off skin serving as a boat for the casting to take place in, frequently capsizes and the mosquito dies at the very threshold of existence. And those that do hatch successfully now have to take their chances among dragon flies, bats, lizzards, toads, night hawks, and a host of other enemies.

MOSQUITO CONTROL.

Suppose that some progressive energetic town desires to get rid of mosquitoes, how will it go about it? Manifestly, the first thing is to determine what the prevailing species are, and where they breed. The State Board of Health may lend assistance here. This determined, it remains to control these breeding places. By far the greater number will be found to be neglected vessels of water on private premises, such as tanks, cisterns, rain-barrels, watering troughs, sagging gutters; even the water pitcher in the spare room may breed mosquitoes enough to supply the whole household. Let the council make it the duty of every citizen to keep his own premises clear of wigglers, imposing, if necessary, a small fine for neglect of this duty, in order to make it effective. Troughs and pitchers and vessels that can be emptied once a week need that only. Cisterns and tanks can be screened so that the mosquitoes can't get to them to lay their eggs. Or, they can be oiled.

In addition to this, let every household have its artificial breeding place—a pail of water set in some shady place in the yard. Mosquitoes will come to it to deposit their eggs, instead of going to some place where they would be difficult to find or get at. These traps will catch most of the eggs to be deposited about the place. And as they require about ten days to come to maturity, the pails need only be emptied once a week and refilled. But they serve a better purpose still than merely an artificial breeding place. They will be a most potent factor in education. They are so many aquaria where every man, woman and child will acquire a practical knowledge of the breeding habits of mosquitoes—will come to know the eggs, the larvae, pupae, the time they require to hatch, the wherefore of exterminating them, and then,



CULEX PIPENS. LINN. AFTER HOWARD. (FEMALE.)

instead of having a few enthusiastic workers, the whole town will become enlisted and the mosquito is doomed.

Breeding places around town are to be controlled by the city authorities. Some places can be filled up. Others can be ditched. Fish can be introduced into some, or duckweed, and so on. The ingenious American will find ways and means if only he enlists in earnest.

To control the salt-marsh breeders is a state problem and can not be discussed here. Nor does it concern places without the range of their migration—say, 20 miles or more from the coast. Nor need it deter any place from waging war against its local mosquitoes, thereby getting rid of disease carriers.

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"Prejudice takes the place of reason and hatred warps the faculty of thought."

LISTEN.

Would you keep well this summer, and for the matter of that, for all time? Then you must pay due regard and obedience to Nature's laws of rightful living. And by you, the *NOTES* means anyone whose eyes follow these lines. The laws of health are as inexorable as the celestial or terrestrial laws. They are unchangeable, and when a man disobeys or violates one of these laws punishment follows, and the severity is according to the degree of the offense. Intemperance in either eating or drinking is oftentimes immediately followed by sickness, and if the indignity to Nature is repeated then the consequences are more serious, but perhaps not fatal. However if a dose of poison is taken Nature is overwhelmed with the violence of the insult and death results. So it is plain to see and to learn that to be healthy and to keep healthy every one must keep a guard over themselves, both in matters of diet as well as in maintaining an equable mental temperament. Some say "rather than to be constantly on the alert for causes which may make me sick, I prefer to take chances," and it is this class who fall victims to disease and oft repeated attacks, generally ending up in chronic invalidism. The physical constitution of people differs as do their mental traits. Some people are more easily fatigued, more readily succumb to sudden shocks or nervous impressions, have to be more careful in their eating, demand more rest, such as sleep, than other people require, or is necessary to maintain a healthy equilibrium of vital forces. Each one must study himself, watch the effect of various diet and certain acts, and then profit by experience thus gained to bring into harmony those conditions of body and mind which effect a healthy state, a physical well being. It is a common error that many fall into in supposing that sanitary science is difficult to understand, or that there is a mystery about keeping well. 'Tis true that life itself is a mystery, a great mystery, and that the students of the human body are appalled every day when pondering over the delicate machinery of the human frame, and see that each part fits so in harmony with every other part, and must do so to keep up breathing, moving and thinking in this wonderful construction of a Supreme Being. But the principles of sanitation are so few and so simple, and more than that, have been written and talked about so much that the person must be densely ignorant, and unlettered, who does not know the necessity of pure air, pure water, pure and wholesome food, in preserving the human health. It is not absolutely essential that every one should have a knowledge of bacteriology in order to understand why gormandizing is hurtful,

or that sleeping in a close room is injurious because of the contaminated air which is breathed over and over again, or that if the body is not sufficiently protected from the chill of cold, congestion of the internal organs will probably take place, or on the other hand if the body is kept too hot, and in profuse perspiration by heavy clothing, increased heart action takes place, and depression of energy follows.

If individuals will only stop and think a little—reason the matter out, with cause and effect, it will not be a difficult problem to solve—this business of keeping well.

BRAINS VERSUS IDIOCY.

A man of intellect exercises that quality of mind which seeks to understand proven facts and does not jump at conclusions or express an opinion until all evidence has been carefully considered and the argument both for and against has been minutely gone over in every possible detail of disputation. A man of intellect is not swayed by prejudice or bigotry or conceit. He is not self-opinionated, and above all else he is consistent in both his expressions on any given subject as well as in his acts. He does not advocate one thing one day and do another exactly opposite the other. In fine, a man of intellect is a reasoning being, willing to be convinced, and yielding to those who have made a special study of a subject, a superiority of knowledge in any line of inquiry which he has not had either the opportunity of gaining for himself or the desire to especially investigate. The counterpart of the individual which is here described is an imbecile, an idiot in general terms, whose gray matter is so small and so lacking in quality that prejudice takes the place of reason and hatred warps the faculty of thought.

These two types of human kind are found in every community, in every State, and may be said to be the progressives and obstructionists of society. It is certainly refreshing and should be a matter of great congratulation to the sanitarians of the United States to have at the head of this great nation a man of intellect, a man who accepts proven facts in sanitation and withal a man who will act upon his conviction of what is right, and adopt measures for the preservation of the public health which centuries have confirmed to be not only the best but the only means of escaping contagion. When President Wilson ordered that every member of the White House family should be vaccinated because a servant employed lived elsewhere in the city where a smallpox case had developed, he set an example to the anti-

and to certain other people, supposedly high in the councils of the nation, that was a sermon full of sound and thoughtful doctrine. Not only did President Wilson give the order for every member of the official family residing or employed in the White House to be vaccinated, but he did more. He showed his faith in the discovery of Jenner, and bared his own arm to receive that protection against smallpox which the experience of centuries teaches never fails. Mrs. Wilson and the Misses Wilson, the press tells us, also were vaccinated. There does not seem to have been any hesitation on the part of the President as to what was the proper course to pursue, for his action was prompt and decisive.

Health officers can now take courage and hope for that support in national health legislation which a practical application of knowledge of preventive measures on the part of the President shows that he fully appreciates and has taken an active interest in promoting.

GOOD ADVICE.

The President of the State Board of Health, in his annual report this year, to the Governor of Florida, says, among other things:

"Malaria is a mosquito carried disease. It could be eliminated by getting rid of all mosquitoes. This is impossible. But malaria can be reduced by preventing the mosquitoes from biting. This, too, is only possible within certain limits. The mosquito that transmits malaria bites, as I understand, only at night. Then it follows that, by sleeping under mosquito nets and in screened houses, malaria-carrying insects can be kept out. This will prevent malaria. But here again, no law or organization can make one do so against his will; here again it is seen that the matter of protection against malaria is also a matter of individual responsibility.

"Typhoid fever, on the contrary, shifts the burden. Here it is not the individual so much at fault as the community. Typhoid fever in this State is largely fly-borne. But the flies themselves are innocent, except when they are permitted access to typhoid excreta. The prevalence of typhoid fever, therefore, resolves itself into one of sewage disposal. That is the work of the community. No community can have a low typhoid rate till it addresses itself seriously to the matter. We have assurance, however, that any municipality that earnestly undertakes it, can do so with the full certainty that the 'goods can be delivered.' Public opinion is beginning to hold the municipality

culpable that fails to provide protection to its citizens against this disease.

"The glanders law is defective. In a general way it provides, whenever an animal develops glanders in the State, and it is so diagnosed by the State Board of Health, the animal is to be destroyed by the owner and paid for by the State. It was recognized that this would put a premium on the practice of unscrupulous horse dealers bringing glandered animals into the State, having them diagnosed and killed and paid for. But the law tries to make ample provision against this by requiring, as a pre-requisite to payment, that the animal shall have been in the State a year when the disease is developed. But oftentimes the disease, although contracted elsewhere than in Florida, does not develop for two or more years, and so the law is defective in this particular. It was also recognized that the early diagnosis of glanders is imperative, and in order to have any suspicious trouble early reported to the State Board of Health, another pre-requisite is that no owner should be paid for the loss of more than ten animals in any one year.

"The law has been operative for four years, and has been scrupulously followed by the State Board of Health. But the legislature has twice enacted special legislation not in harmony with the law. In one instance more than ten animals were paid for, and in the other animals were paid for that had not been in the State a year.

"The law is not quite clear on that point. As a pre-requisite to paying for condemned animals they are to be appraised. The law specifies that the condition of the animal at the time of the appraisement is to be taken into account by the appraisers. Some appraisers take it to mean that the animal is to be appraised as it would be without the disease—that is, its worth without glanders; others, that it is to be appraised as glandered. In the latter case, it is manifestly valueless, for it is to be killed. If it is appraised as valueless, there is no reimbursement to the owner. This has occurred once. A very poor widow lost an animal from glanders, and could not recover a cent for it, while in all other instances the animals have been appraised at something, usually \$75.00, which is the maximum to be paid. Here again, the legislature has enacted special legislation. In one instance the animals were all appraised at their value with glanders subtracted, and the owners were reimbursed at the appraisement value, although they had previously been paid \$75.00 as the law provides. It is hardly fair to the State Board of Health to be charged with the administra-

tion of a law that is so defective that one person will be reimbursed for a glandered animal and another not. Nor is it fair to the Board or to the public, that of all those that lose animals and are duly reimbursed according to law, certain ones should be singled out by the legislature for special reimbursement while others are ignored. It is hoped that a sense of justice to the people and fairness to the Board will prompt the legislature to remedy the defect in the law so that it can be administered to all alike."

The President of the Board strikes at the root of defective legislation when he comments on the free distribution of hog cholera serum. Listen to what he says:

"The free distribution of hog cholera serum by the Board was provided for by the last legislature. Within certain limits hog cholera serum is a bonanza to stock raisers. But the rationale of it is so intricate, so difficult to understand, and so more than difficult to apply with accuracy, except by one trained especially for it, that it is not an economic procedure to send it out free to all who ask. Under the present law, the Board has no choice but to send it to all who ask. I understand it is requested under all sorts of misunderstandings. For instance, sickness gets among a man's hogs, and he thinks it is cholera and asks for serum. It is found to be lungworms instead of cholera. The serum is used, and is more than wasted. It is wasted because it does no good. It is worse than wasted because the owner thinks his hogs are afterward immune to cholera when they are not. Then when true cholera comes, he makes no provision against it, because he thinks they are immune. More than that, he thinks the serum is a failure, and disparages its use. Then there are other errors—a man has a herd of hogs that are doing well; he requests the State Board of Health to come down and give them the serum, thinking it like some patent medicine and good for everything. Again, a man will order serum and then not use it. On one occasion a man asked for 1,000 c. c. (Twenty dollars' worth.) It was promptly sent with full instructions. Six months later the Assistant Veterinarian was in a barber shop and saw the bottle setting on a shelf unopened. Upon inquiry, he was told by the barber that the man paid a barber bill with it. Again, people use it, and make no report on it. They are written for reports again and again, and only a small per cent report. Nearly six thousand dollars' worth of the serum sent out during the year has had no report made on it. From all of which it will be seen that there are so many places where there is an unavoidable leakage, that

to send it out free is not an economical procedure. Whatever is gained where it is accurately administered, is lost by errors in other places.

"It is, therefore, hoped that you will impress upon the legislature the necessity of revising the law so as to subserve the purpose for which it is intended. This can readily be done; the only thing necessary is to so revise the law as to have the serum furnished, not free, but at actual cost, or even at fifty per cent of the cost, the State Board of Health paying half; anything to get it off the 'free list' so that some check can be had on it."

The report is as full of sound business judgment and reasoning as a Florida pecan is full of wholesome and toothsome meat. If you have not seen it, write for a copy. It is yours for the asking.

AS OTHERS SEE.

It is profitable at all times to learn from others, and what our neighbors say or think on the problems of the day oftentimes make a deeper impression and are of more lasting benefit than the expressions coming from the members of our own family. The legislature of Pennsylvania last year authorized and required the Governor of that State to appoint a commission to inquire into vaccination, and report upon its merits and demerits. The commission, the act stated, was to consist of two men known to be in favor of vaccination, two men known to oppose it, and three neutrals. The following, taken from the report of the "Vaccination Commission of Pennsylvania," a document recently received, presents the views which the State Board of Health of Florida has for a long time entertained, and tells what a careful investigation, unbiased and unprejudiced, has gathered from a vast amount of information, which has been obtained in a most careful and painstaking way:

"In the days when smallpox inoculation was practiced the protective value of vaccination appears to have been indisputably proven on many occasions and in many lands, by the so-called 'variola test.' Persons who had been vaccinated were subsequently inoculated with smallpox with negative results, thus evidencing the fact that vaccination protected against smallpox.

"One of the most conclusive of these tests was that carried out on Noddle Island, Boston, in 1802. The plan of the experiment proposed was published in the newspapers for the consideration of the public. A small building was erected on Noddle Island and on August 16th, 1802, the experiment was begun. Nineteen boys who had been vaccinated with cowpox were later inoculated with fresh smallpox

virus. At the same time, in the same rooms with the same virus, two previously unvaccinated boys were inoculated with smallpox. These two subjects contracted smallpox, one having 500 pustules on the body and the other 150. On the other hand, the nineteen children previously vaccinated developed neither fever nor eruption, but remained perfectly well. They were a second time inoculated with the material from the two boys just referred to, but again resisted the smallpox infection. Furthermore, 'they all remained together with the smallpox lads, in the same house, in the same room, and often in the same beds, without producing the least appearance of the smallpox.'

"Each of the children was examined by eleven eminent physicians who were invited to be present, and 'who were individually convinced from the inspection of their arms, their perfect state of health, and exemption from every kind of eruption on their bodies that the cowpox prevented their taking the smallpox.'

"This test appears to us to be the most conclusive experiment of the kind ever undertaken.

"Dr. Charles Creighton, of England, an anti-vaccinist witness before the Commission, would not admit the validity of this test, stating that he doubted the 'logical capacity and critical sincerity' of these eleven physicians. But this experiment was made in the presence of five laymen who constituted the Board of Health, and these non-medical witnesses corroborated in detail every statement in the report of the physicians.

"They conclude: 'Having daily visited the hospital ourselves, and made the most critical observations and inquiries' * * * we 'therefore are confident in affirming that the cowpox is a complete preventive against all of the effects of the smallpox upon the human system.'"

The State Board of Health will furnish full information on smallpox and vaccination to those who desire it, and places gratuitous vaccination within reach of every one. The information that the Board has to offer aside from that gleaned from the literature, is an experience covering 25 years, in which it has had the management of 15,000 cases of smallpox and has done approximately 300,000 vaccinations. Whether it is qualified to speak with authority on the subject of smallpox and vaccination, let those answer who are interested.

It might be said, in this connection, that there are certain things to be said against vaccination, but it is the opinion of this office that the things in its favor far outweigh those against it, and should receive paramount consideration. However, the Board does not, nor does it have any desire, to enforce compulsory vaccination, and agrees with the Commission mentioned above that the statute in that State requiring vaccination as a precedent to school admission, constitutes

the most important barrier against widespread epidemic of smallpox (such as was experienced in Jacksonville two years ago, when the school board withdrew the rule requiring vaccination as a prerequisite for entrance into public schools, and in Pensacola last year). The Board will furnish information true and unbiased, and then the individual must be the arbitrator of his own fate.

ANOTHER OBJECT LESSON.

A remarkable demonstration of the value of vaccination recently occurred near Dundee, Ill. Miss Helm, teacher in a country school, went to friends in Minnesota for a visit during the Christmas holidays. She returned January 6, 1913, and resumed her teaching. Children from seven families attended her school. On January 13th, Miss Helm was taken sick with smallpox; she had never been vaccinated. On February 1st Miss Helm's mother came down with smallpox; mother was never vaccinated, father had been vaccinated and remained well. On February 5th two of her pupils in the Fritz family came down with smallpox; they had never been vaccinated. All other members of the Fritz family had been previously vaccinated and remained well. On the same date two children in each of the Frink and Coats families came down with smallpox; never vaccinated. All other members of these families had been vaccinated and remained well. On February 12th exactly the same condition was repeated in the Price family. This accounted for four families. The pupils from the remaining three families had all been vaccinated and none contracted the disease.—*Buffalo Sanitary Bulletin*.

"THE HALL MARK OF IGNORANCE."

"I don't blame my mother, because doubtless she thought she was protecting me when she would not have me vaccinated. Many a time I have heard her say that virus was filthy and would give me scrofula. I knew no better and grew up to manhood unvaccinated. While I was on the road, ten years ago, I stopped over night in a town where there was an epidemic of so-called 'chickenpox,' very mild, they said, and harmless. I went home and in two weeks developed smallpox in its virulent form. For three weeks I suffered the tortures of perdition, and when I was well again my face was fearfully pitted, as you see. The scars are bad enough, heaven knows, for they disfigure me for life, but I hate them still more for another reason. Why? Because

they brand me for life with the hall-mark of ignorance and useless suffering."—*Virginia Health Almanac.*

DR. OSLER'S CHALLENGE TO THE ANTI-VACCINATIONIST.

"A great deal of literature has been distributed casting discredit upon the value of vaccination in the prevention of smallpox. I do not see how anyone who has gone through epidemics as I have, or who is familiar with the history of the subject, and who has any capacity left for clear judgment, can doubt its value. Some months ago I was twitted by the editor of the *Journal of the Anti-vaccination League* for a 'curious silence' on this subject. I would like to issue a Mount-Carmel-like challenge to any ten unvaccinated priests of Baal. I will go into the next severe epidemic with ten selected, vaccinated persons and ten selected unvaccinated persons—I should prefer to choose the latter: three members of parliament, three anti-vaccination doctors, if they could be found, and four anti-vaccination propagandists. And I will make this promise—neither to jeer nor jibe when they catch the disease, but to look after them as brothers, and for the four or five who are certain to die I will try to arrange the funerals with all the pomp and ceremony of an anti-vaccination demonstration."—*American Magazine.*

The following is an expression of opinion of Dr. Watson, of New Hampshire, regarding smallpox and vaccination:

"The State has been obliged to be at an expense of nearly \$3,000 during the two years on account of smallpox. The little town of Jackson was put to an expense of over \$2,200 on account of an outbreak of smallpox in a lumber camp in that town. We are probably well within bounds in stating that smallpox during the two-year period has entailed an expense upon the State and the towns of not less than \$10,000—all of which might have been avoided *through vaccination.*

"Every person has it within his own power to protect himself from smallpox, and it is a question how much longer quarantine will be maintained against this disease. It has already been abandoned in some States. It would seem to be not unreasonable to place the re-

sponsibility of protection upon the individual, for in vaccination he has absolute protection."

A successfully vaccinated person who, after exposure to smallpox, is re-vaccinated, should never be quarantined; he should be allowed to continue at his work, but be kept under supervision to guard against his developing smallpox, a thing that will rarely happen. To place such a subject in quarantine, thereby making him a charge upon the taxpayer, is frequently an abuse of power, an exhibition of ignorance of the protective power of vaccination or an unwillingness to accept the results of the experience and studies of other men. It is also an incentive to conceal those sick of such diseases, and is as much to be censured as is a case of highway robbery. The city may furnish fuel and a limited amount of provisions; occasionally it will furnish clothing and other articles, but it does not pay the house rent or the servant's hire. The vaccinated unquarantined man will be a material aid in the management of smallpox.—*The Virginia Medical Semi-Monthly*.

THE STUDENT'S HEALTH CREED.

I believe my body and good health are sacred. If I am sick it will very probably be because I have violated some one or more of nature's laws of health.

I will study nature's laws of health and will obey them for my own sake.

I will not suck my fingers, or pick my nose or wipe my nose on my hand or sleeve, for these practices are unsanitary and very impolite.

I will not wet my fingers in my mouth when turning the leaves of books.

I will not put pencils in my mouth nor wet them with my lips.

I will not put pins or money in my mouth.

I will not buy nor use chewing gum nor buy and eat cheap candies.

I will only use my mouth for eating good plain food, drinking pure water and milk, and for saying good and kind words.

I will always chew my food thoroughly, and never drink whiskey or wine.

I will strive against the habit of "clearing my throat" because it is nearly always unnecessary, and may be disagreeable to others.

I will not cough or sneeze without turning my face and holding a piece of paper or handkerchief before my mouth. Polite people never cough in public if they can prevent it.

I will not paint, print, or carve any vulgar and obscene words or pictures in any of the houses.

I will keep my face, hands and finger nails as clean as possible.

I will not spit on floors, stairways or sidewalks, and will try not to spit at all; ladies and gentlemen do not spit.

I will wash my mouth every morning on getting up and at night on going to bed, and will use a tooth brush if I can get one.

I will be clean in body, clean in mind and avoid all habits that may give offense to others.

I will get all the fresh air I can and will open wide my bedroom windows when I go to bed.

.....
Name of student.

—Department of Health, Clinton County, Indiana.

STATISTICS.

SMALLPOX.

During April, 1913, 113 cases of smallpox were reported from the following counties (2,265 points vaccine were distributed) :

Alachua	2
Bradford	9
Citrus	1
Dade	4
Duval	19
Escambia	59
Jefferson	2
Leon	3
Levy	3
Manatee	3
Marion	2
Santa Rosa	1
St. Johns	5
<hr/>	
Total, April	113
Total reported cases, 1913	787

RABIES.

During April, 1913, anti-rabic treatment was administered in the following counties:

DeSoto	2
Duval	8
Hillsboro	7
Pasco	2
Polk	1
<hr/>	
Total, April	20
Total number persons treated, 1913	56

GLANDERS.

During April, 1913, glanders was found in the State as follows:

Duval County	2 cases
Total cases glanders, 1913	10 cases

HOG CHOLERA (*Distribution of Serum*).

Amount hog cholera serum distributed, April	27,500 c. c.
Amount hog cholera serum reported administered by agents, April ...	8,865 c. c.
Number hogs treated in April	456
Total weight hogs treated, pounds.....	27,650
Total number agents appointed, April	43
Total number agents appointed	156

TICK ERADICATION.

During April the following counties were visited by Tick Eradication Agents of the State Board of Health: Columbia, DeSoto, Hillsboro, Lee, Polk and Osceola.

Clubs were organized in April in the following counties: Columbia, Polk, DeSoto, Lee and Osceola.

In April cattle dipping vats were built in the following counties:

Hillsboro	1
Alachua	3
Leon	1
Marion	2
Duval	1
<hr/>	
Total number vats constructed, April	8
Total number vats constructed to April 30	9

During the month of April public demonstration of dipping cattle was held in Florida at Tallahassee, Leon County.

PUBLICATIONS.

During April two publications were issued by the State Board of Health for distribution, as follows:

Publication No. 104, Hookworm.

Publication No. 105, Malaria.

Total pieces literature distributed in April1,496

SPECIMEN EXAMINATION, BACTERIOLOGICAL LABORATORIES.

	<i>Jacksonville</i>	<i>Tampa</i>	<i>Pensacola</i>
Animal Parasites	234	110	28
Diphtheria	81	54	8
Gonorrhea	41	23	50
Malaria	183	231	25
Pathological	12	19	3
Rabid Dogs	15 (1 cow)	6	
Tuberculosis	162	73	42
Typhoid Fever	114	146	12
Water (for Sewage Contamination)	4		2
Miscellaneous	28	18	39
Totals	874	680	209

Total specimens examined by State Board of Health Laboratories, April, 1913, 1,763.

INGERSOLL'S REPLY.

A young man who sought a clerkship in one of the departments at Washington, once asked the late Robert G. Ingersoll for his endorsement and this was Ingersoll's reply:

"Young man, I would rather have forty acres of land, with a log cabin on it and the woman I love in the cabin—with a little grassy, winding path leading down to the spring where the water gurgles from the lips of the earth, whistling day and night to the white pebbles a perpetual poem—with hollyhocks growing at the corner of the house, and morning glories blooming over the low thatched door—with lattice work over the windows so that the sunlight would fall checkered on the dimpled baby in the cradle—and birds, like songs with wings hovering in the summer air—than be clerk of any government on earth."

In Siam, those who die of smallpox are refused cremation until after they have been buried awhile, because they are said to "lack

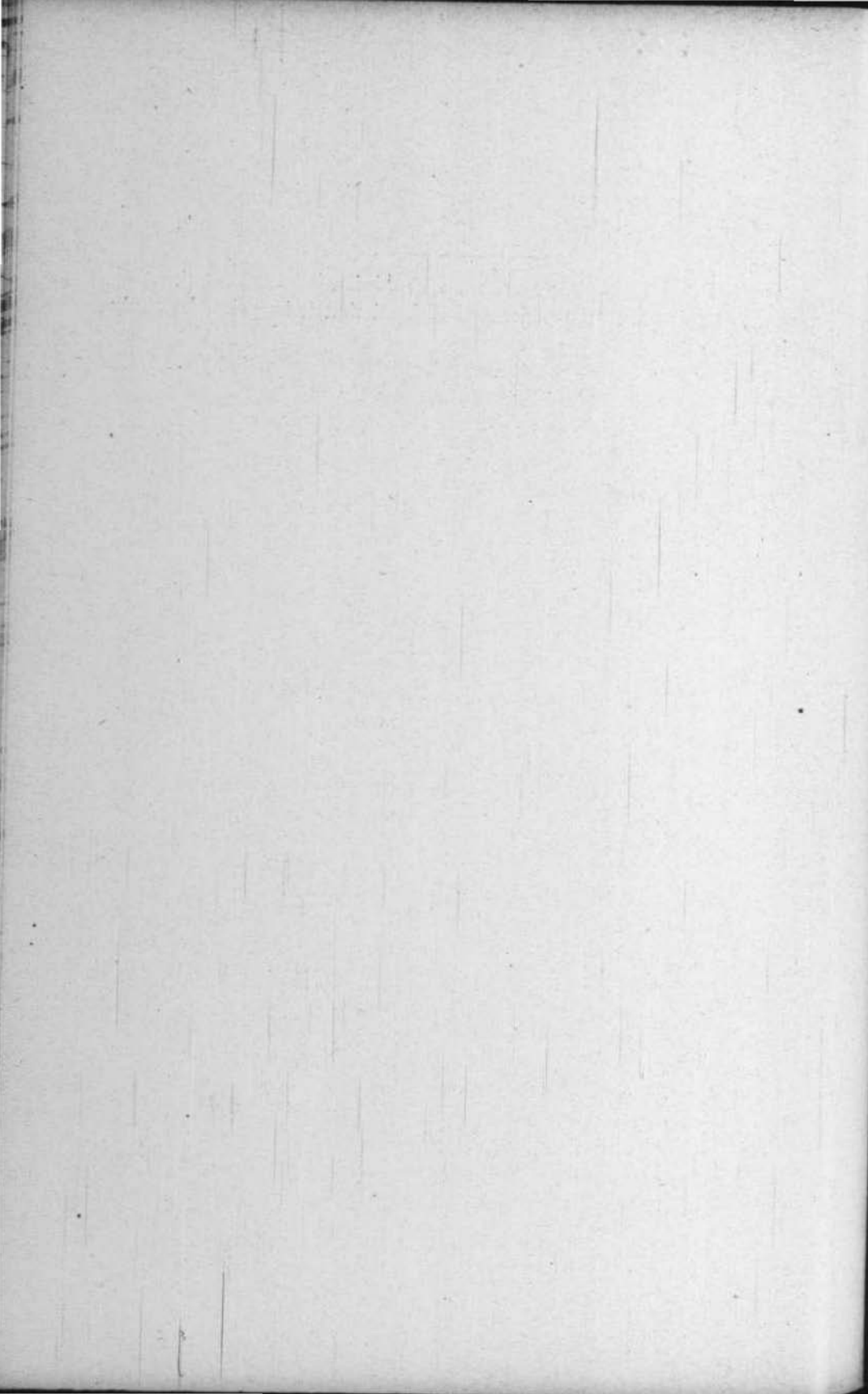
merit"—another way of saying "because they didn't get vaccinated." That would have saved them both from smallpox and from the humiliation of an improper funeral.

A bird dog belonging to a man in Mulvane disappeared. The owner put this ad. in the paper and insisted that it be printed exactly as he wrote it:

"Lost or run away—one livver culered burd dog, called Jim. Will show signs of hyderfobby in about three days."

The dog came home the following day.

Any closet is sanitary that is fly proof.



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Health Notes



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Springfield Boulevard,
Jacksonville.

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When giving change of address, give both the old and the new.

Anything you want to know about the public health we will try to tell you.

Any information you want about communicable diseases of domestic animals we will help you to get.

Address communications to Jacksonville, Fla.

How like the leper, with his own sad cry

Enforcing his own solitude, it tolls!

That lonely bell set in the rushing shoals,

To warn us from the place of jeopardy!

—Charles (Tennyson) Turner.

LEPROSY.

By Dr. Hiram Byrd, Assistant State Health Officer, Jacksonville, Fla.

[Read before the Annual Meeting of State and Municipal Health Officers of Georgia, at Savannah, April 15, 1913. Published in Journal of The Medical Association of Georgia, June, 1913.]

In Munich, Germany, there is a painting, now 397 years old, by the celebrated artist, Hans Holbein. It represents Saint Elizabeth giving bread and wine to a group of prostrate lepers. That picture connects the leprosy of the middle ages with leprosy as we know it today. The disease represented by the painting is unmistakable. Virchow does not doubt that Holbein studied leprosy among the hospitals at Augsburg, and that this painting was made from life.

Leprosy is the oldest disease of which we have any definite history. Its original home is lost in the misty records of the past. It certainly prevailed in Egypt, for when the Jews left there it undoubtedly was endemic among them. The subsequent descriptions by Moses and the institution of methods of segregation show that he was well acquainted with it, but that the methods of diagnosis at that time were not sufficiently discriminating and that they included several other diseases, one of which was probably vitiligo. Some think that Job's affliction was leprosy.

Just when leprosy was introduced into Europe is a matter of considerable doubt, but it was certainly at a very early date. The Lombard King, Rothar, in the seventh century made laws regulating the marriage of lepers, and so did Charlemagne. But it was not until the Crusades, about the twelfth century, that it became widespread. First appearing in Italy, it spread from there over entire Europe. For a period of two or three hundred years it was a veritable curse. About the fifteenth century every town, even of moderate size, had a leper hospital. It has been estimated that there were as many as nineteen thousand leper hospitals in Europe at once. France alone had over two thousand. In the southern part of Europe these leper hospitals were usually of some religious character and were dedicated to San Lazaro, whereas in the northern part they were more secular and most of them dedicated to Saint George. Finally, toward the latter part of the sixteenth or seventeenth centuries, leprosy slowly declined. The last case seems to have died in Shetland Islands about 1741.

DISTRIBUTION.

At the present time leprosy is distributed, more or less, all over the world. Its greatest prevalence is in southern Asia. Its least prevalence seems to be in North America, Northern Europe and Northern Asia, but, even where it is least prevalent, there is here and there an occasional case, or even a leper colony. At the International Congress on Leprosy, at Bergen, Norway, in 1909, there were reported nearly two hundred thousand officially recognized cases in the world. Of these, India has practically half; Japan about 40,000; Java, 15,000; the Argentine Republic, 12,000; Indo-China, 10,000; United States of Columbia, 4,000, while America, together with her island possessions, has a little over 3,000. The mainland of America had only 146 reported, whereas the Hawaiian Islands had 764; Porto Rico, 17; Guam, 19; Canal Zone, 7, and the Philippine Islands, 2,330. In the United States proper there is no way of knowing just how many there are, but there seems to be three or four centers wherein they have more than elsewhere.

In 1909 the late Walter R. Brinckerhoff, of the Public Health Service, made a report upon leprosy in the United States. He collected a total of 139 officially recognized cases. Of these Louisiana had 50; Florida, 20; California, 20; Minnesota, 16; Texas, 12; Massachusetts, 8; New York City, 4; South Carolina, 3; Washington, Wisconsin, New Jersey, Missouri and District of Columbia, each 1. This report is evidently very incomplete, as any report upon leprosy must of necessity be. Brinckerhoff himself thinks that there are at least twice as many cases as have official recognition. But the distribution is, nevertheless, significant. There are what might be termed centers, the most important of which is in Louisiana. This is easily accounted for by the fact that Louisiana was largely colonized from France, at a time when France still had a considerable leper population. Florida has a considerable Cuban population, particularly at the coast places, and Cuba has 1,000 to 1,200 lepers now. California has a considerable Japanese population, and Japan, we remember, has some 40,000 officially recognized lepers. Minnesota has a large Norwegian population, and Norway is still a leper center. It is among the Norwegians that the disease is mostly prevalent in Minnesota.

DIAGNOSIS.

From a public health standpoint the two most important considerations are diagnosis and management.

Leprosy, like smallpox, is very easily diagnosed when a man who is familiar with the disease encounters a typical case, but a large number of cases are not typical. In San Lazaro Hospital, Havana, the author saw a number of cases which had he met them on the street he never would have suspected they were lepers. In Hawaii, where the disease is fairly prevalent and where the population in general is so familiar with it that the layman knows it as well as our lay population knows tuberculosis, even there, Brinckerhoff believes that the average leper is overlooked four years before a diagnosis is finally made.

In the United States proper there are approximately one thousand times as many physicians as there are lepers. Consequently a large majority of them have never and will never see a leper during their entire professional career. Even those physicians located at the most leprous centers, but who do not go abroad to study the disease, will rarely in life see more than a score or two of cases. No wonder a contention can arise about the diagnosis of the disease.

In the present day no one undertakes to make a definite diagnosis of leprosy without finding the lepra bacillus, so that after all the microscope is the final judge in the case. But before it can come to the microscope some symptoms must develop which arrest the physician's attention and cause him to suspect leprosy. It is only that group of symptoms which will be considered in this connection—those symptoms which appear earliest and which are earliest calculated to arouse suspicion on the part of the physician and to lead to microscopical examination.

Brinckerhoff secured detailed histories of twenty-one cases which are about as accurate as one can ever hope to get, since the disease is practically always some months or years old before a final diagnosis is made and before an onset history is sought.

Of these twenty-one cases the first symptom noticed was, in twelve instances, "spots" on various parts of the body, mostly the face. Some of the spots were white, but most of them were described by the patients as red. These spots varied in size from a flea bite to as large or larger than a dollar. Four of the twenty-one patients first noted macules. These were variously located. One experienced difficulty in breathing through his nose five years before the spots appeared on his body. One had the red spots come in his face and experienced a numbness of the hands, about the same time, while one had a "cold"

in the head which was followed by nodules in the face. In a leprous community these spots are sufficient to at once arrest attention, but elsewhere they would more than likely be passed as a simple urticaria. A leper that came under the author's observation seems to have first developed some face disturbance, which was explained as due to a powder burn. Another one had an attack of fever, which may or may not have been caused by leprosy, after which he experienced a thickening of his nose with more or less obstructed breathing. Following this erythematous patches appeared in his face, and later over his body.

In the presence of known leprosy, the foregoing symptoms are quite sufficient to attract attention, but in its absence, and especially where the laity and even the physicians are not familiar with the disease, it usually has to progress much further before serious attention is paid to it. Further progress is manifested in most cases by these spots on the face or body, as the case may be, getting a little more pronounced and more prominent by reason of becoming pigmented. At the same time the ears are likely to take on a patulous consistency and later to become very large, tight and cold.

I once had the pleasure of being present when the commission for infectious diseases in Havana passed on a case of suspected leprosy. This was the condition of the patient in question. It had progressed to this point without previously having attracted attention, although in a town where there is a leper hospital with about one hundred and seventy-five inmates and where all of the physicians are acquainted with the disease. The patient had been working in a meat shop up to the very day that he was apprehended and brought before the commission.

MICROSCOPICAL DIAGNOSIS.

As before stated the microscope must be the supreme court in these cases. In Havana, in Hawaii and everywhere else, so far as I know, no case is finally diagnosed without bacteriological confirmation. The simplest method of examination for the lepra bacilli consists of making smears from the nasal secretions and will usually, though not always, yield positive results whenever there is a nasal ulcer. When a case is suspected and the nasal swab does not show the lepra bacilli other methods have to be resorted to. It should be remembered that the lepra bacilli in the tissues occupy the lymph spaces. They rarely find their way into the blood, except by accident, but they fill the lymph space with such numbers as to produce a sort of lymph stasis, particularly

in the lobe of the ear, and it is from this point that they are most easily obtained. The lobe may be caught up between the arms of a pair of forceps and pressure exerted until the crest of the fold becomes blanched. Now a little incision can be made through this and clear lymph will exude. A slide is applied to this and a drop secured on the middle of the slide and allowed to dry. When this is stained after the manner of staining the tubercle bacilli, the organisms will be found frequently in immense numbers. (Dr. Hanson and I have made a number of slides after this method which I wish to present with our compliments to the gentlemen present, especially those that are more interested in the bacteriological side of medicine.) When the lobe of the ear is not affected, a hyperesthetic or anesthetic spot on the body may be chosen and the skin pinched up in the same way, and the incision made through the crest of the fold. The results will be just the same.

This technic is used almost exclusively in Havana and, as I understand, originated there. It is certainly the simplest and probably the best method yet devised for finding the lepra bacilli. The more usual technic is to select an anesthetic spot or a nodule, as the case may be, and cut out a tiny portion of the tissue. In Honolulu a safety razor blade is used for this purpose. It is then ground in a mortar, put on a slide and stained as for tubercle bacilli.

ETIOLOGY AND TRANSMISSION.

Very young persons rarely have leprosy, very old rarely have active cases. The majority of the cases occur between fifteen and thirty years. Men have it more than women. About two-thirds of a leper population will be found to be men. That the disease runs in families is well known. It has accordingly been held that it is inherited. A successful contradiction of this is found in Molokai. There they have a colony of six or seven hundred lepers. Children are frequently born of leper parents. They are immediately taken away from the parents and transferred to an orphan asylum in Honolulu. They have two of these asylums, one for the boys and one for the girls. They have some forty children in each. Dr. Pratt assured me that in no instance as yet have they had one of these children later develop leprosy. The conviction is accordingly forced upon us that *leprosy is not inherited*. Another very general truth must be recognized. *Leprosy does not develop in a country where there is no pre-*

existing leprosy. Just how it is transmitted from person to person, though, is not definitely known. The prevailing opinion is that it is contagious, but not contagious in the sense that smallpox or scarlet fever is, but a contagion of a low order—one more like the contagiousness of tuberculosis, but still lower. It is a well known fact that persons frequently live in close contact with lepers for years and years without ever contracting the disease. Again referring to Molokai, in that colony they had eight or nine hundred lepers until recently when the number has gradually become reduced to about six hundred. They have something like one hundred helpers, not one of whom has ever contracted leprosy there since Father Damien died of it in the eighties.

This leper colony in Molokai is a little social community unto itself. The lepers have their sports and come to enjoy life perhaps as much as most other people. While the authorities are now endeavoring to prohibit multiplication of lepers, formerly marriage was common in the island. Leprous and non-leprous individuals frequently married. One woman is reported to have had five leprous husbands, and borne children by them, and never to have contracted the disease.

San Lazaro Hospital in Havana is in charge of the Sisters of Mercy, not one of whom has ever contracted the disease.

Facts like these have led people to seriously doubt its contagiousness. But on the other hand if we assume that leprosy is contagious, and of a very low order of contagion, it will be consistent with every known fact, biologically, epidemiologically and otherwise, concerning the disease. Such an assumption would make a person who lives with leprosy take a certain risk of getting it, but that risk would be, to say the least, very minimal. This is the view held by the leading leprologists of the world at the present time.

BACTERIOLOGY.

Just after Louis Pasteur had demonstrated the fallacy of spontaneous generation, and had shown that fermentation is a living process, and had found that the disease, chicken cholera, is due to a living germ, and had demonstrated that the silk worm disease, flacherie and pebrine, were due to living organisms—just when people were beginning to suspect that most or all of the diseases which we know as contagious or infectious, were living process—a Scandanavian, Hansen, found in the tissues of a person suffering from leprosy an acid-fast organism

which he named the bacillus leprae, and which has since been universally accepted as the specific cause of this disease.

The bacillus leprae belongs to a large group of organisms known as the acid-fast group of which there are several well-known members that are pathogenic and several others that are innocent.

Among the pathogenic members of this group may be mentioned the bacillus of tuberculosis with all its varieties, the bacillus of leprosy and the bacillus of rat leprosy; and among the innocent members, the smegma bacillus and the hay bacillus.

Most or all of these can be grown in artificial culture media without difficulty, but until very recent times the lepra bacillus has refused to grow except in the human body. Many attempts to grow this organism in vitro by many bacteriologists have utterly failed. It was not until 1901 that Kedrowski cultivated an organism from leprous tissue which he believed was the lepra bacillus, although it was not acid-fast. He found that after he injected it into laboratory animals and let it remain a few weeks it became acid-fast. He arrived at the conclusion that the lepra bacillus was a pleomorphic organism. Four years later Professor Deycke Pasha, in Constantinople, took leprous nodules, transferred them to a normal salt solution and let them grow at incubator temperature for a period of six weeks, when he found that he had a profuse growth of a streptothrix which he called Streptothrix leproides. Another four years elapsed when Clegg, in Manila, announced that he had been able to cultivate an acid-fast bacillus from leprous tissue by growing it in the presence of an amoeba with its symbiont, the cholera bacillus. He subsequently obtained a pure culture of this acid-fast bacillus by heating to sixty degrees for thirty minutes to kill the symbionts. Clegg's work was subsequently confirmed by Brinckerhoff and Currie, in Honolulu, as well as several other observers. More recently still Duval, of New Orleans, and his co-workers report that they have been able to grow bacilli from leprous tissue and, what is more, to differentiate them into two or three kinds. He lays particular stress upon two varieties, one of which is chromogenic and the other non-chromogenic. From all of which it would seem that about four distinct varieties of organisms have been obtained from leprous tissue, two of which are non-acid-fast and two acid-fast. Of the two non-acid-fast organisms one is a diphtheroid (Kedrowski) and the other a streptothrix (Deycke). Of the acid-fast one is chromo-

genic (Clegg) and the other non-chromogenic (Duval). Whether these four represent various forms of a pleomorphic organism is yet to be determined.

SPECIFIC THERAPY. *

Two discoveries have combined to inspire the medical world with many brilliant hopes, some of which have been destined to meet sore disappointment. One was the discovery of antitoxin for diphtheria, the chemical nature of which, though not understood, is highly specific and the other is the specific reaction of tuberculin in persons suffering from tuberculosis. These have led the world in untiring zest to seek a specific for most or all of the more serious communicable diseases, and particularly those diseases in which the specific cause is known. Accordingly leprosy was among the first to entice workers to seek for a cure. A large number of substances, chemical and bacteriological, have accordingly been tried out. Danielssen, Goldschmidt, Truehart and others have treated leprosy with tuberculin, the rationale of which was based upon the fact that the lepra bacillus is morphologically and tinctorially closely allied to the tubercle bacillus. It has been found that tuberculin does give a reaction, that is to say, its injection makes the patient temporarily worse. Potassium iodid has been used in the same way, and for no other reason than after its administration the patients frequently show a reaction. Carrasquilla claimed to have found a specific for leprosy in what is known as Carrasquilla's serum. This was prepared simply by taking the serum of a young, vigorous person suffering from leprosy and using it as other sera are used. Babes immunized animals with avian tuberculosis and injected their serum into lepers.

There is a belief in Brazil that if a leper gets bitten by a rattlesnake he will either die of snake bite or recover from leprosy. Marcoudes de Moura accordingly used rattlesnake venom in the treatment of leprosy. Following this Dr. Deyer, of New Orleans, used Clamett's anti-venin and Rost, in 1905, used leprolin which was prepared from culture of the lepra bacillus, as tuberculin is prepared from the cultures of the tubercle bacillus. About this time Professor Deycke took large quantities of the streptothrix leprodis which he had grown in salt solution and injected into leprous patients and got a reaction, whereupon he ground up the streptothrix and treated it with ether and separated it into a fatty and non-fatty portion. The fatty portion he

gave the trade name of Nastin, which has been tried out in various parts of the world but with indifferent success.

Gilchrist, in the Philippines, used the X-ray upon lepers. The ingenious theory underlying this was that the X-ray would kill the lepra bacilli near the surface and that they in turn would be absorbed and act as a vaccine to increase the immunity of the patient.

Quite recent developments in cultures of the bacilli of leprosy in vitro lead us to expect that the greatest possible use will be made of these developments, and to hope that a therapeutic agent of unquestioned value may yet be found, for it must be acknowledged that up to the present time the therapeutic treatment of leprosy is little if any more advanced than it was one thousand years ago.

PROGNOSIS.

Although the treatment of leprosy is as yet unsatisfactory, it is to be admitted that a certain number of cases recover. I believe it is the consensus of opinion among leprologists that leprosy is a self-limited disease. Dr. Dyer especially entertains this view. Several cases have recovered in Louisiana, and quite a number have recovered in Hawaii. They have recovered in the sense that the active processes have all ceased, and that the lepra bacilli are no longer to be found in the body. When there is destruction of tissue, whether much or little, that, of course, is never repaired, so that an advanced case of leprosy, even though it does recover, may still be an unsightly mass of humanity. Some have even held that the active life of leprosy is not more than fifteen years; that the patients either die in that time, or that the activity of the disease ceases. While this can not be accepted in toto, it does indicate the general trend of the disease.

They have recently introduced in the leper settlement in Molokai a system of paroling lepers from the station. Whenever all evidence ceases and they can no longer find the lepra bacilli, the patient is set at liberty with the understanding that he will report at the office every three months, and as long as this condition prevails, he remains at liberty. Sometimes they lapse back and are returned to the station, but in other instances they remain well indefinitely.

The author has under observation at the present time a leper where-in all evidence of activity of the disease has ceased, but the lepra bacilli are still found in the nasal secretions. It should be observed in passing that, while the outlook for recovery, once leprosy is established

in the individual, is not good, still the suffering from the disease is not great. In fact, a number of lepers, in San Lazaro Hospital assured me that they had not been sick a day in ten years.

MANAGEMENT.

The management of leprosy varies greatly in different parts of the world. Everyone is familiar with the instructions given by Moses for lepers in the Hebrew camps. This, however, seems to have been more a religious rite than a matter of sanitation. Late in the middle ages and during the prevalence of leprosy in Europe, the isolation of lepers was fairly rigidly enforced both by law and popular sentiment, and above all by the edicts of the church.

The leper was to all intents and purposes dead. Dean Milman has graphically described the church ceremony when a leper was sent into sequestration. The rite differed little from the burial service. After the leper had been sprinkled with holy water, the priest conducted him into the church, the leper singing the song "Libera me Domine," the crucifix bearer going before. In the church a black cloth was stretched over two trestles in front of the altar and the leper leaning at its side, devoutly heard mass. The priest, taking up a little earth in his cloak, threw it on one of the leper's feet, and put him out of the church, * * * took him to his hut in the midst of the fields, and then uttered the prohibitions: "I forbid you entering the church * * * or entering the company of others. I forbid you quitting your home without your leper's dress." He concluded: "Take this dress and wear it in token of humility; take these gloves, take this clapper, as a sign that you are forbidden to speak to any one. You are not to be indignant at being thus separated from others, and as to your little wants, good people will provide for you, and God will not desert you. When it shall come to pass that the leper shall pass out of this world he shall be buried in his hut and not in the church yard."

It was these ceremonies that inspired that pathetic poem of Tennyson, "The Leper's Bride," in which a wife follows her husband into exile, saying:

"You need not wave me from you,
I would leap into your grave."

How very complete this system of isolation was can best be appreciated by remembering what a tenacious hold the church had upon

its communicants in those days—how even kings didn't dare violate the priestly mandates.

There is little room to doubt that it was this enforced isolation of lepers effected chiefly by the church that gradually eradicated the disease from countries where it once so extensively prevailed.

At the present time opinions differ widely as to what course should be pursued with this disease. New York City, for example, pays no attention to it. In 1906 a leper by the name of George Rossett turned up in Baltimore, Md. Rossett was a Syrian, and wanted to go to New York. The health authorities of Maryland willingly gave him assistance. He was put on a freight train and got as far as Philadelphia, but New Jersey would not allow him to pass through, whereupon he was shuttle-cocked back to Baltimore. Later he showed up in West Virginia and died at Parkersburg. Commenting on the matter, Dr. Doty, of New York, said: "What this leper wanted to do, probably, was to get to New York where there is a large colony of his people, the Syrians, his hope being that his countrymen would help transport him to his home. * * * Leprosy is one of those disorders medical science knows little about. Dealing with facts as we do, and not with theory, we have learned that though leprosy occurs in parts of the United States, there are no reported instances of one case having caused others. There is popular fear of it, but the facts as they have been observed do not warrant the fear. * * * Dr. Darlington and I are agreed that in New York leprosy is not a factor in State sanitation. We do not consider it at all further than to hold that in this country it is not a menace to the public. There is no prohibition against this poor outcast coming to New York."

Leprosy in New York used to be isolated on North Brothers Island, but in 1897 they were set free and since that time they have been ignored.

These views of Dr. Doty and Darlington represent one extreme. Dr. Hunter, secretary of the State Board of Health of Colorado, represents the other. Dr. Hunter stated before the last conference of State and Provisional Boards of Health of North America that he would not even allow a leper to go through the State of Colorado.

In a general way the management of leprosy in Cuba is one of isolation. Indigent persons when apprehended are sent to leper hospitals, of which there are two in the island, and cared for at the expense of the government. Persons with money are not required to

go to the hospitals, but are permitted to stay at home. However, the leper must have his own room in the family, his own bed linen, eating utensils, etc., and must not mingle with the rest of the household. The sanitary inspector of the government calls occasionally, perhaps once a month, to advise with the family and patient, and to see that these instructions are carried out. It is not likely that they are strictly adhered to in the inspector's absence.

In Hawaii the management of leprosy would seem to be all that could be desired. On the island of Molokai is a mountain chain running parallel with the coast. Rivers make down from the mountains in such a way as to completely enclose a considerable plain. This plain is bounded on the one side by the ocean, on the opposite side by the mountains, and at the two ends by rivers. Here is located the leper colony of the Hawaiian Islands. It is here that Father Damien lived and labored and contracted leprosy and died. The territorial government of Hawaii is endeavoring to get rid of leprosy entirely by placing all lepers in this colony. Those with means are permitted to leave the country, but all others when apprehended are sent to Molokai. They are well cared for and given medical attention, and if accounts can be trusted are reasonably contented.

They formerly married and were given in marriage, but the government disparages that now. When a child is born of leprous parents, it is immediately taken away as before related and sent to Honolulu to be brought up. Under this management the number of lepers has been reduced in the last few years from nearly one thousand to some five or six hundred. But there are still a number of cases of leprosy occurring in the island.

In the Philippines a similar management under Victor Heiser has been instituted. All lepers as they are apprehended are transferred to one of the islands set aside for that purpose. This will undoubtedly lessen the number of lepers. But owing to the fact that leprosy can not be diagnosed early there will always be a residue of lepers among the remaining population. From these considerations it is certain that leprosy may be entirely ignored on the one hand as it is in New York, and not be followed by any immediate disaster, and that it can be isolated with the greatest precision possible on the other hand as it is in Hawaii, and not be followed by immediate eradication. That almost

amounts to saying that it matters little what we do or don't do, we will affect very slightly the immediate increase or decrease of leprosy.

We must not forget, however, that leprosy once prevailed all over Europe; that law and sentiment and religion combined to enforce isolation of the afflicted and that finally the disease has practically disappeared. Nor must we forget that leprosy was in Asia even before it was in Europe; that the isolation it gets over there hardly deserves the name, and that instead of disappearing as it has in Europe, it is as prevalent there today as it has ever been. All of which would indicate that although it may take centuries to bring it about, a reasonable isolation of those afflicted with leprosy is our only hope of ultimately ridding the world of its oldest and most dreaded disease.

STATISTICS.

SMALLPOX.

During May, 1913, smallpox was reported from the following counties (1,630 points of vaccine were distributed):

Alachua	1
Brevard	1
Dade	2
Duval	37
Escambia	20
Levy	2
Manatee	10
Marion	1
Pinellas	1
Polk	1
Putnam	5
Santa Rosa	1
St. Johns	11
St. Lucie	1
<hr/>	
Total, May	94
Total reported cases, 1913.....	881

RABIES.

During May, 1913, anti-rabic treatment was administered in the following counties:

Alachua	2
Duval	1
Hillsboro	1*
Lafayette	1
Leon	1

Total, May 6

Total persons treated, 1913..... 62

Total deaths from hydrophobia, 1913..... 2

*Treatment ineffective on account location of bite. Patient died in 30 days.

GLANDERS.

During May, 1913, glanders was found in the State as follows:

Duval County 6 cases

Total cases glanders in Florida, 1913..... 16 cases

HOG CHOLERA (*Distribution of Serum*).

Amount hog cholera serum distributed, May.....39,500 c. c.

Amount hog cholera serum reported administered by agents, May.... 9,780 c. c.

Number hogs reported treated in May.....462

Total weight hogs treated, pounds.....26,050 c. c.

Number agents appointed, May..... 4

Total number agents appointed to June 1..... 160

TICK ERADICATION.

During May the following counties were visited by Tick Eradication Agents of the State Board of Health: Bradford, Alachua, Marion, Osceola, Hillsboro, Pasco, Pinellas.

Clubs were organized during May in the following counties: Pasco, Hillsboro.

In May cattle dipping vats were built in the following counties:

Osceola 1

Alachua 2

Pasco 1

Marion 1

Total number vats constructed, May..... 5

Total number vats constructed to June 1.....14

During the month of May public demonstrations of dipping cattle were held at Wacahoota (Alachua Co.), McIntosh (Marion Co.), Citra (Marion Co.), Tampa (Hillsboro Co.), Kissimmee (Osceola Co.).

PUBLICATIONS.

During May one publication was issued by the State Board of Health, viz.:

Publication No. 106, Mosquitoes.

Total literature distributed in April (not including HEALTH NOTES, or mailing list of Annual Reports), 1,075 pieces.

SPECIMEN EXAMINATION, BACTERIOLOGICAL LABORATORIES.

	<i>Jacksonville</i>	<i>Tampa</i>	<i>Pensacola</i>
Animal Parasites	187	112	56
Diphtheria	218	77	16
Gonorrhea	34	26	37
Malaria	213	228	17
Pathological	6	7	1
Rabid Dogs	9	1	0
Tuberculosis	146	77	42
Typhoid Fever	157	116	10
Water (for sewage contamination).....	11	0	0
Miscellaneous	147	12	29
Totals	1,128	656	208

Grand total number of specimens examined by the State Board of Health Laboratories, May, 1913, 1,992.

BOOK REVIEWS.

Those who are interested in public health matters and clean politics will enjoy reading: "The Career of Dr. Weaver," by Mrs. Henry Backus.

The story is charmingly written and holds the reader's interest to the final page. THE NOTES especially commends the book to its medical friends. The morals taught are high, and the author brings out the character of a physician who forcibly condemns a practice which offers many temptations to the specialist, to whom "money getting" has in these latter days, seemingly, in many instances, overshadowed the high ideals of the Hippocratic oath.

The type is sufficiently large and clear so that reading will not be tiresome or a strain to the eyes either on train or boat.

At a meeting held at Jacksonville, June 10, for the purpose of re-organizing the State Board of Health, the following officers were elected: Hon. Frank J. Fearnside, of Palatka, President; Joseph Y. Porter, M. D., of Key West, Secretary and State Health Officer. Hon. Frank J. Fearnside, of Palatka, Hon. C. G. Memminger, of Lakeland, and Hon. S. R. Mallory Kennedy, M. D., of Pensacola, comprising the new Board, were appointed by Governor Trammell to assume office June 1, 1913.

FLORIDA Health Notes



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No. 7 (New Series)

HON. FRANK J. FEARNSIDE, President,
Palatka, Fla.

HON. S. R. MALLORY KENNEDY, M. D.,
Pensacola, Fla.

HON. C. G. MEMMINGER,
Lakeland, Fla.

EDITED BY

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Springfield Boulevard,
Jacksonville.

BRANCH LABORATORIES:

State Board of Health Building
Florida Avenue and Constant Street, Tampa.
City Hall, Pensacola.

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When giving change of address, give both the old and the new.

Anything you want to know about the public health we will try to tell you.

Any information you want about communicable diseases of domestic animals we will help you to get.

Address communications to Jacksonville, Fla.

Men who are occupied in the restoration of health to other men by the joint exertion of skill and humanity are above all the great of the earth. They even partake of divinity, since to preserve and renew is almost as great as to create.

—Voltaire.

RABIES IN FLORIDA.

BY HENRY HANSON, A.M., M.D.,
Senior Bacteriologist, State Board of Health of Florida.

[Read before the State Medical Association, Miami, Fla., May 15, 1913.]

One is almost compelled to say that rabies exists in Florida because the Floridians want it! This is sad but true. There are certain things which the people can have if the people want them. Rabies is one of these. If one consults the statistics on the subject, it will be found that the accumulated facts support these extraordinary statements. There are few public health measures which have met as persistent opposition as have the efforts aiming at rabies eradication. There is no disease which causes greater agony than hydrophobia. It is also true that there is no disease which is more easily preventable than hydrophobia; when the people of the community will allow the health authorities to prevent it. Only two simple measures are necessary—a license tax which is enforced and a muzzling ordinance.

Here I wish to quote from the twenty-fourth Annual Report of the State Board of Health, 1912, letter of transmittal by the President of the Board. The paragraph referred to is found on page 10 and refers to smallpox. I am substituting the word hydrophobia for smallpox, which makes the paragraph read as follows:

"We have had, during the year, hydrophobia as usual. This is a very instructive disease. It teaches that, although a disease may be entirely preventable, still we refuse to prevent it; not through failure or neglect on the part of the health authorities, but through opposition to accepting the only known method of prevention."

What the State Health Officer says on page 24 of the same report can also be applied to hydrophobia. If one compares the results as set forth by statistics from England and Australia, where rabies is at present unknown, it will be seen that England eradicated rabies by enforcing an effective muzzling ordinance. Australia has never had the disease, due to the fact that she does not allow a promiscuity of existence among the canine species. Quarantine laws and muzzling ordinances in Australia are such that the disease could not be imported. Compare these results with those of this country (and this State is no exception) "where a 'do as you please' policy seems to prevail and where especially ignorance is permitted to dwarf reason and demagoguism receives plaudits," and one can see why hydrophobia continues to flourish. The last three lines can well be applied to the conditions which

have existed in the city of Jacksonville for the past twenty-six months so far as efforts to control the dog situation are concerned. This matter has not been in the hands of the right department of the city government and all efforts to impound stray and homeless curs have been made spasmodically and ineffectively. This inefficiency has been the cause of a great deal of unjust criticism of the City Health Officer who has kept up a desperate but losing fight to have the muzzling ordinance enforced and homeless curs impounded. The attitude taken by an afternoon daily and a weekly publication in the city has done a great deal to defeat the efforts of the State and City Health Departments to make Jacksonville a place where it might be safe to let little children play out in their home yards or in the parks, two places where they have undisputed right to play, without being mangled by worthless rabid curs. There are those who will say that I am "knocking Jacksonville," but such is not the case. I am simply pointing out some very serious obstacles in the path of the city's wonderful forward march. I am a property owner in the city and am, therefore, the more interested in her prosperity, and certainly can have no reason to engage in a "knocking" venture.

I will cite two instances which will lend weight to the fact that the city has not been a very safe place for children to play in or even live in.

One of these occurred in my own home. A rabid dog ran into my dining room where I cornered him by means of a large sofa cushion, grabbed him by the back of the neck, carried him out and shot him through the heart while I still held him. The head of this dog was examined at the laboratory and showed negri bodies.

The second, a more recent occurrence, where a rabid dog entered a house in West Jacksonville and *bit two children in their own home*. No one can appreciate the mental torture of the parents except those who have experienced such trials.

During the past twenty-six months the number of children who have been bitten, within the city limits of Jacksonville, is too great to mention individually; an enumeration by the localities and ages of the little victims ought to be sufficient to arouse every fair-minded individual to earnest co-operation for the complete suppression of the disgrace to the State which this rabies situation is.

During 1911 thirty-three children, between the ages of two to ten years, were bitten by rabid animals in Duval county, most of whom were in the city of Jacksonville. *Seven of these were two-year-old babies*. Four three years old and fourteen were four to five years old.

Sixteen other children, between the ages of two and ten years, were bitten in various parts of the State. In this same year forty-two persons older than this were bitten in Jacksonville. The total number of persons for whom the State Board of Health provided treatment was 115.

During 1912 the total number of persons for whom the State Board of Health provided treatment was 114; evidently the lesson of the previous year was not sufficient. Of this number forty-eight occurred in Jacksonville and Duval county, and thirteen of these were children of the ages two to ten years, one two years old, two three, two four, three five and five seven to ten years old.

In Hillsboro county twelve children of the ages two to ten years were bitten; of these one was two years old and two three years old. During 1912 thirty-seven children of these tender and helpless years were bitten, and yet the people of the State do not seem to care, as is clearly manifested by the way the year of 1913 is starting out. During the first four months of this year twenty-four children, less than ten years old, have been bitten and provided Pasteur treatment by the State Board of Health. A total of fifty-three treatments has been ordered by the Board during the first four months of the present year.

It is not enough that in the past twenty-six months these 281 persons have been obliged to submit to the disagreeable and painful Pasteur treatment, but we know from our statistics that more than one per cent of those treated must die. Without treatment sixteen per cent die. We save fifteen out of every hundred bitten; the other eighty-four possess sufficient immunity to destroy the virus.* Paltauf found in doing post-mortems on four individuals who died from some inter-current disease shortly after being bitten by rabid animals that the medulla of these men emulsified and injected subdurally infected rabbits with rabies; showing the presence of active virus in the patients' nervous tissue, but this virus was in an attenuated condition since the inoculation period in the inoculated rabbits was unusually long. This does not mean that each of these would have developed the disease but rather that the virus reached the central nervous system and was there destroyed by the defensive mechanism in the brain without producing symptoms. These agencies are made more effective by the immunizing process of the Pasteur treatment. In other words, rabies-inoculated men usually develop a latent infection which is overcome without the

*Herzog, Disease Producing Microorganisms.

symptoms of rabies. Such is the case in the eighty-four per cent that do not develop hydrophobia although the Pasteur treatment is not administered.

In three other persons, who were bitten by a rabid animal and died from other diseases shortly after completion of the Pasteur treatment, the medulla was found non-infectious to rabbits, indicating that the virus was destroyed by the process of the Pasteur treatment. The virulence of the virus is the deciding factor whether or not the disease will be overcome. The deaths occur in cases where the virus reaches the brain before the effect of the Pasteur treatment has become effective.

There is a financial side to this question which ought to interest those who are not interested in the humanitarian side. The State Board of Health began furnishing treatments in 1908 and during the first five years \$8,325 was paid out by the Board for treatments. The first four months of this year has swelled that sum to \$9,675, every cent of which has gone out of the State without a fraction of a dollar's return. Other expenses in connection with these treatments, due to fees for administration, loss of time, etc., has doubled this expenditure so that one can say that 384 dog bites have cost the State over \$18,000, and most of these are made by the ownerless and homeless cur. This ought to put a valuation of nearly \$50.00 on each dog. Since I have examined most of these animals I know that more than three hundred were such that no one would pay fifty cents apiece for them.

The loss to Duval county during the past twenty-six months in horses, mules, cattle and valuable high-bred dogs and other domestic animals amounts to over \$15,000. I have not been able to secure sufficient data to be able to estimate the property loss to the State in general, but know that a large number of such animals have died from the effects of hydrophobia.

In my last annual report I stated that there is some presumptive evidence that the disease is getting a foothold among the wild animals of this State, which is a very serious matter, indeed.

In the past five years the disease has existed in thirty-four counties and sixty-six separate localities. Each year we find the disease in localities where it has not heretofore been known. In 1908 rabies was reported from six localities in the State. In 1909 from seventeen localities, fourteen of which had not previously reported rabies. In 1910 from twenty-one localities, fifteen of which had not previously reported rabies. In 1911 from twenty-two localities, eleven of which

had not previously reported rabies. In 1912 from twenty-seven localities, nineteen of which had not previously reported rabies. The total of which shows sixty-six points distributed through thirty-four counties.

Since the beginning of 1908, 550 animals have been examined in the laboratories of the State Board of Health, 385 of which have definitely proven to have had hydrophobia and in that time have bitten about four hundred human beings and a much larger number of domestic animals of all kinds.

It would seem that what I have already said ought to be sufficient to cause the people of the State to take a very decided action in regard to the rabies situation. It is, nevertheless, a curious fact that certain persons and newspapers in the State become very loud in their denunciation of all statements of facts of this nature. They are always harping on the injury which these plain facts are to the State. If these individuals would direct the same amount of energy towards supporting the measures for eradication of this evil rather than trying to suppress the facts and allowing it to exist unchecked, they might be able to sway a certain portion of public sentiment to the point where the situation would be controlled as it should be.

Recently a weekly paper of Jacksonville has criticized Dr. Porter for publishing a statement to the effect that there are approximately twenty thousand tubercular patients in the State of Florida. This statement seems to have stirred up the anxiety of the editor about the injury which this information is going to do the State. Dr. Porter's statements are true, but they are not worse than statements which could be made about any other State in the Union. The proportion of tuberculosis in the United States is very nearly the same in all States, but the fact remains that some States are doing a great deal more for their patients than others. Florida is delinquent in her care of the tuberculous.

When bubonic plague broke out in San Francisco there was a tremendous amount of pressure brought to bear upon the health authorities to suppress the information in regard to the existence of plague in San Francisco. The consequence of which was that the disease continued to spread. It was only after the situation was aired and the people of San Francisco were made to understand very clearly that plague existed there and was at that time on the increase that the public health authorities received sufficient co-operation to institute the measures necessary for its eradication among humans. The efforts at

suppressing the information led to the establishment of plague among rodents and squirrels on the Pacific Coast.

This hue and cry by those who are afraid that the information we are giving out in regard to disease conditions is going to injure the State has resulted in obstructing the public health measures to the point where all efforts at eradicating the said disease has been ineffective and has allowed hydrophobia to spread throughout thirty-four counties in this State.

Florida, on account of her location, can eliminate rabies from the State with very much less effort than any other State in the Union; no rabid animal can enter the State from the east, south or west with the exception of a very narrow strip at the west end of the State. A proper enforcement of a dog ordinance directed against homeless curs and the worthless mongrels would make conditions such as we have had in the past twenty-six months impossible.

The reasons which I have given for stopping this evil ought to be sufficient, but as it seems that they are not I will mention a few tragedies.

Seventeen deaths of humans have occurred in this State since 1903. Six of these took place prior to 1911.

The first of which I have record is the case of a negro in Tallahassee, who is said to have been bitten on the arm by a cat.

The second a negro child in Pensacola early in the winter of 1903; Dr. Pierpont and Dr. Hiram Byrd saw this case.

The third a grandson of Col. Bob. Davis, whom Dr. Wm. Stinson attended. This occurred in Jacksonville.

Fourth. The case of the Dees child, which Dr. Stinson also has information of.

Fifth. A person named Sweat in Ocala, which occurred in 1908.

Sixth. Case of a man at Carrabelle in the practice of Dr. B. B. Blount. History of this case is on file in the office of the State Board of Health.

Seventh. Case of an old man at Otter Creek, a patient of Dr. J. W. Turner.

Eighth. Alfred Miller, a boy eight years old, on Myrtle avenue, Jacksonville; patient of Dr. R. L. May. This case was reported to the State Medical Society at Tallahassee in 1911, and also in the Journal American Medical Association, December 23, 1911, volume 57.

Ninth. Clarence Lowther, large robust man, bitten above the eye,

who died on the twenty-first day after being bitten; a patient of Dr. Frederick Bowen, Jacksonville.

Tenth. A colored child in Riverside; case reported by the City Health Department, Jacksonville.

Eleventh. Colored child on Evergreen avenue, Jacksonville; patient of Dr. Randolph, summer of 1912.

Twelfth. Patient of Dr. Smoak in Tampa, summer of 1912.

Thirteenth. A case at Starke, Fla.; patient of Dr. A. H. Freeman.

Fourteenth. Case at Tampa; patient of Dr. Bartlett.

Fifteenth. Case near St. Augustine; patient of Dr. DeWitt Webb.

Sixteenth. Rudolph Dasher, a child on Florida avenue. This child was given Pasteur treatment by Dr. B. Smith; at the time he developed rabies he was a patient of Dr. Geo. Mitchell, of Jacksonville. Died in March, 1913. This was a case where the biting was unusually revolting. The child was playing on the walk in front of the house and was attacked by a cur dog, which threw the child to the pavement and bit him in the nose and mouth in such a way that it had two puncture wounds in the palate. He also bit the child on the arm and hand. This case is rather unusual in that the Pasteur treatment, which was secured very promptly, was finished and the symptoms did not develop until five months later. Our explanation for this can only be that the treatment delayed the disease but did not produce immunity sufficient to ward it off. We did not expect at the time the child was bitten that it would survive and expected fully that the symptoms would develop before the completion of treatment.

The seventeenth case I only have indefinite information of. It is reported by Dr. Bartlett to have been a case outside of the city of Tampa.

What excuse can our State authorities offer for the death of these seventeen human beings? Are the dogs of this State worth more than these seventeen humans? They forget that good dogs can exist without any opposition on the part of the health authorities or any one else, and such dogs be free from hydrophobia if they will only support us in controlling the stray cur and allowing us to suppress the disease when it comes to our notice.

"What has your boy learned at school so far this term?"

"He has learned that he'll have to be vaccinated, that his eyes aren't really mates and that his method of breathing is entirely obsolete."—*The Pathfinder*.

TICK ERADICATION BILL AS PASSED BY THE LEGISLATURE.

An Act to provide the State Board of Health with funds for the eradication of the Southern cattle tick, *Margaropus annulatus*; to authorize the county commissioners of the various counties to appropriate funds to be used in such work; and to permit the appointment of federal officials as agents without pay.

Be it enacted by the Legislature of the State of Florida:

SECTION 1. The State Board of Health is hereby authorized, empowered and directed to expend, under the regulation provided by existing law, such amounts as the Board may deem necessary and expedient, out of the funds derived from the operation of Chapter 4693, Acts of 1899, in the control and eradication of the Southern cattle tick, *Margaropus annulatus*; through the employment of State and county agents, payment for labor and materials, and for any other expenditures that may be found useful and necessary in the prosecution of such work; and the State Board of Health is hereby authorized and empowered, after investigation of suitable locations, and upon recommendation of the Executive Committee of the Florida State Live Stock Association, to construct cattle dipping vats in communities where such aid is deemed useful for demonstration and proper conduct of tick eradication work.

SECTION 2. The county commissioners of any county of the State are hereby authorized and empowered to appropriate such amounts as they may deem adequate and necessary, for the purpose of co-operating with the officials of the State Board of Health in eradicating the Southern cattle tick, *Margaropus annulatus*, and preventing contagious and infectious diseases of live stock, or whenever funds for this purpose are raised by private subscription of individuals.

SECTION 3. The State Health Officer is hereby authorized and empowered to appoint such officials as may be detailed by the United States Department of Agriculture for co-operative work in the eradication of the Southern cattle tick, *Margaropus annulatus*, or the control or suppression of any contagious or infectious disease of live stock, in Florida, as Agents of the State Board of Health; provided they act without pay from the State of Florida.

SECTION 4. This Act shall go into effect upon its passage and approval by the Governor, or upon its becoming a law without his approval.

SANFORD, FLA., June 14, 1913.

Dr. J. Y. Porter,
State Health Officer,
Jacksonville, Fla.

DEAR SIR: A bill was introduced in the Legislature by Representative Lake, of Orange, to prevent the use of artesian wells as receptacles for sewage. This bill was so changed in the Senate as to allow the overflow of "septic tanks" to pass into the wells.

The direct use of the wells is the system in Ocala. Orlando is on the point of installing septic tanks, but during the past five years the wells have been used directly for the discharge of sewage from a number of large buildings, such as the San Juan hotel, the Arcade, the Abernathy building, and the Watkins block.

Is there not, in this use of the wells by the higher sections of the State, great danger to all towns using artesian water for drinking purposes? Can it be guaranteed that the treatment in the tanks renders the sewage thoroughly innocuous, and that there will be no danger in this method of sewage, when it shall be adopted by an increasing number of growing towns and continued through many years?

We owe it to those who shall come after us, to preserve in unimpaired purity the supply of artesian water which is justly counted as one of Florida's greatest blessings. The State Geologist, in his report, condemns the use of the wells for sewerage, and says that it is a dangerous practice and should not be permitted. This, of course, refers to the direct use; but unless the permanent and absolute efficiency of the tanks as germ destroyers can be assured, there must be serious danger in turning their overflow into the wells, and it is not only possible, but highly probable, that in the actual operation as time goes on, there will be failures to keep the tanks up to the point of efficiency which may be claimed for them, so that the water supply will become contaminated, and this would be a serious matter to the whole State, not only from a sanitary point of view, but from a commercial one as well. And the evil may then be irremediable.

A committee has been appointed by the Woman's Club of Sanford to investigate this matter, and we are writing to you for information especially regarding the system as proposed at Orlando, our own supply being in the opinion of experts identical with the underground stream into which Orlando's sewage will be discharged.

Winter Park has just completed an elaborate water system, using artesian wells. If this overflow from Orlando's tanks passes into this artesian water, Winter Park will probably substitute lake water for artesian, and abandoning the wells as a source of drinking water, use them for sewage as in Orlando. Then Maitland, Altamonte and Longwood will follow suit. But Sanford and Kissimmee, north and south of Orlando, lie at a lower elevation, and the water rises to the surface;

consequently these towns could not use the wells for sewage if they wished; but surely the water would be unfit to drink.

We realize that in time, with air and sunlight, flowing water purifies itself, but is it the same with underground streams, and within this comparatively short distance?

Jacksonville, St. Augustine and most of the East Coast towns, many on the Gulf and in the interior, depend upon this artesian supply of drinking water, and in view of its widespread importance, it seems almost imperative that this question should have an authoritative answer, affirmative or negative: "Is there, in this system of sewerage, a menace to the public health, now or in future?"

We beg that you will take this very serious matter into consideration and favor us with a prompt reply.

Yours respectfully,

HEALTH COMMITTEE,
Woman's Club of Sanford.

JACKSONVILLE, FLA., June 18, 1913.

*Chairman Health Committee, Woman's Club of Sanford,
Sanford, Fla.*

MY DEAR MADAM: I have your letter of June 14th, and allow me to say first of all that it is exceedingly refreshing to get a letter of this kind, one in which an intelligent inquiry is made rather than a "knock" in the guise of an inquiry. I take great pleasure in going over the question of sewage disposal and the pollution of underground waters in this State with you.

As you have pointed out, Orlando, Ocala, and you might have added Live Oak, Madison and possibly some other places, have been, for a number of years, emptying raw sewage into the ground. This the State Board of Health has always disparaged—raw sewage, you understand.

Sewage may be treated in such a way as to become innocuous. For example, several years ago Tallahassee instituted a system of septic tanks, the first in this State. All the sewage of the town is run through those tanks. When the effluent passes out of the tanks, it is clear, sparkling water. I have repeatedly had it examined bacteriologically and chemically, and it comes up to the bacteriological and chemical test of drinking water. Consequently that water can be emptied into the ground, into a creek or anywhere with absolute assurance that it will do no harm.

The septic tank idea is rather a new one, and is more or less difficult to understand, but after all, the principle is not so complicated. For example, a very simple test may be carried out as follows: A glass bottle or demijohn may be filled with raw sewage, and set aside and allowed to stand for a few weeks. In the course of time there will be nothing in the bottle but a little sediment at the bottom, and the clear, sparkling water above. "What has taken place?" is the question; the water above is next to sterile, and could be emptied anywhere with

absolute safety. The sediment in the bottom is sludge, mineral matters, which go to make soil. The thing that has actually taken place is this: The bacteria contained in the sewage have reduced it to its simplest elements, water on the one hand and mineral matters on the other, and the bacteria in turn have died of starvation, there being nothing left in the sewage for them to feed upon. It is a process of self-purification. This is exactly what takes place in the septic tank on a large scale. This is what has taken place in the septic tank at Tallahassee, from which the effluent is a relatively pure water.

Now, with the septic tank properly constructed, this effluent can be made as pure as desired. It can be made to have a higher degree of purity than the lakes from which Sanford and Orlando take their drinking water.

The plan that has been proposed for Orlando has been carefully gone over in this office. It has been approved by a consulting engineer in New York, whose opinion is worthy of the highest consideration. This office sees no reason why it should not be carried out as proposed, but on the other hand, regards it as the best solution of the sewage problem yet proposed for that city.

There is one fear mentioned in your letter which is legitimate, and that is whether or not the plant might fail to work and in that way the underground waters become contaminated, and once contaminated, the impossibility of correcting it. There are two answers to that: First, it is hardly likely that the plant will fail to work, and if it does, it would only be in a very minor degree, so that the contamination of underground waters would be, at most, in all probability, a great deal less than from a single one of the wells now in Orlando; and, furthermore, such contamination is very short-lived and very limited in its territory. Typhoid bacilli, for example—and that is what we are most to be concerned about—will not live but a few days in water. It is reasonably safe to say that any contamination of that kind would completely disappear within, say, two weeks. The other part of the answer is, that it would not be widespread. The State Geologist of Georgia, in conjunction with the municipality of Quitman, a few years ago had a question of this same kind to answer. It was proposed at that time to run the sewage of the town of Quitman into the ground. The inquiry was made whether or not it would result in contaminating the adjacent waters, for there were a number of deep wells not far from the proposed point at which the sewage was to be emptied. A gigantic experiment was undertaken to test the matter out in this way. The salinity of all the adjacent wells was accurately measured, and then a saturated solution of sodium chloride was poured into the sewer well in a continuous stream, as I remember, for several days (five I think), and the salinity of the adjacent wells accurately measured each day. All wells three-quarters of a mile away and further were absolutely unaffected. Within that range the salinity was increased.

In view of the persistence of salt in water and of the evanescence

of typhoid contamination, it is generally conceded that this test is liberal and that the results may be relied upon.

I am exceedingly glad that you have taken the matter up, and I assure you that the public health will not be jeopardized, or underground water polluted, whenever the State Board of Health can prevent it.

I may add, in this connection, that it is the Imhoff tank which it is purposed to install in Orlando, and that that is the latest word in the construction of septic tanks.

If we can be of further service to you, it will be a pleasure.

Yours very truly,

JOSEPH Y. PORTER,
State Health Officer.

This office is in receipt of a letter asking for full information regarding the home treatment of tuberculosis.

The NOTES is sorry to have to advise that home treatment at best is unsatisfactory. It must not be inferred from this that people do not recover at home, for they do. In fact it should be distinctly understood, first, last and all the time, that most people get tuberculosis infection during life. There is a German saying that every man has tuberculosis before he dies. This is almost literally true. Many people have it and get well without ever suspecting they have it. Of those that find out they have it,

Some get well regardless of treatment,

Some die regardless of treatment,

but between these two classes of cases is a group which with the best of care recover, without it they do not. It is in this group that treatment is of most importance. If one could forecast in the beginning whether a given individual falls in group one, two or three, it would be relatively easy to deal with them. Group one could be treated at home. Group two should be made as comfortable as possible during their declining days. Group three should be sent to the best sanitarium to be had and just as soon as possible, and kept there as long as necessary to effect a complete recovery.

But not being able to tell which group a given case belongs in, it is necessary to either take chances on life or send it to a sanitarium. If the best possible is done for a case and it doesn't eventuate well, there should be no self-chiding. But if anything short of the best possible is done, then there is room for regrets.

The best possible may be to stay at home, for sanitarium treatment comes high. It may be that the means are not to be had for it. If that is the case, don't, three times DON'T, send one away from home. It is a fatal mistake to send a patient "West" without means. He is almost certain to go backward. There are then two proper courses to pursue when one discovers tuberculosis in the family. If you have the means send him to a good sanitarium; if you don't, keep him at home.

If you keep him at home, place him under competent medical supervision.

Interdict all work of every kind.

Breathe fresh air twenty-four hours each day.

Whenever there is any fever keep patient in bed.

If fever rises in the afternoon, allow very little stirring about in the morning.

At all times keep patient as comfortable as possible.

If constipated, take a little simple laxative, as epsom salts.

Eat regularly and bountifully of simple but well prepared foods. Milk and eggs are the sheet anchor.

All this in the interests of the patient.

There are others in the house. They must be protected. This is particularly true for little children. The tendency now is to believe that most cases of tuberculosis are contracted during childhood. Therefore protect the child.

The patient should sleep alone. Should have his own bed linen, table linen, etc. A large napkin should be spread under his plate so as to protect the table linen. This should be removed with care after each meal. He should have his own eating and drinking utensils and above all he should be careful about spitting. A sputum cup of paper should be used, and this burned. The patient should use paper handkerchiefs, and these burned. The napkin used at the table as well as the one spread under the plate should be of paper, and burned. The patient's hands and face should be washed frequently.

These are only some of the things to do. But the one thing to remember is that a particle of saliva from a patient's mouth no larger than a mustard seed may contain many, many tubercle germs, and these should be protected against at all times.

This do to the best of your ability, and trust to luck that the patient is in group one.

INGERSOLL'S REPLY.

A young man who sought a clerkship in one of the departments at Washington once asked the late Robert G. Ingersoll for his endorsement and this was Ingersoll's reply:

"Young man, I would rather have forty acres of land, with a log cabin on it and the woman I love in the cabin—with a little grassy, winding path leading down to the spring where the water gurgles from the lips of the earth, whistling day and night to the white pebbles a perpetual poem—with hollyhocks growing at the corner of the house, and morning glories blooming over the low-thatched door—with lattice work over the windows so that the sunlight would fall checkered on the dimpled baby in the cradle—and birds, like songs with wings hovering in the summer air—than be clerk of any government on earth."

In London the suffragettes pulled off a few stunts of window smashing, for which they were promptly lodged in jail. In fact they court getting in jail. They even boast that they will get in jail for what they are doing, but that is a small matter.

After getting in jail they don't seem to be sufficiently in the spot light. They refuse to eat. They are not satisfied with being ordinary criminals—they desire to be treated as political prisoners, instead of common street offenders. The officials have refused. They therefore refused to eat, whereupon, the prison physicians force-feed them. And that has caused a scrap in political circles, the point at issue being whether a physician, who has charge of a prison, should force-feed a prisoner, because she refuses to eat on the ground that she should be treated as a political prisoner, and that the government treats her as a common convict.

The reasons why communicable disease as scarlet fever can not be controlled is that the mild cases are not diagnosticated till the disease becomes well established.

For example, in Reading, Ohio, the disease has recently been studied and it was found that in August only 20 per cent of the cases were reported; September, 33 per cent of the cases were reported; October, 66 per cent were reported; November, December, January and February, 100 per cent of the cases of scarlet fever were reported. Then the disease stopped. In other words, as soon as it was known that there was an epidemic of scarlet fever present, everybody looked for it, and everybody found it.

PROPER AMMUNITION.

Finley Peter Dunne, creator of "Mr. Dooley," was dining with a friend at a New York restaurant. Rice-birds were served. The tiny morsels, picked and lean, were brought in on large slices of toast.

"Poor little things!" said the host. "Seems a shame to kill 'em, don't it? How do you suppose they ever murder enough rice-birds to make a dish?"

Dunne turned over an infinitesimal specimen with his fork. "I don't know," he said, "unless they use insect-powder!"—*Pathfinder*.

CONTAGION.

Little George had heard a great deal said about disease germs, such as tuberculosis, etc. One day the family were at dinner, and George wanted a drink of water. The tired mother said:

"Drink out of your uncle's glass, George; he is through eating."

The little fellow commenced to cry, and said:

"I don't want to; I'm afraid I will catch the backache."—*Eustis Lake Region*.

A bird dog belonging to a man in Mulvane disappeared. The owner put this ad. in the paper and insisted that it be printed exactly as he wrote it:

"Lost or run away—one livver culered burd dog, called Jim. Will show signs of hyderfobby in about three days."

The dog came home the following day.

Mamma—Now, Freddy, remember what I say. I don't want you to go into the next yard to play with that Binks boy; he is very rude.

Freddy (heard a few minutes afterwards calling over the fence)—Hello Binks, ma says I mustn't play in your yard because you're rude, but you come into my yard—I ain't rude.—*Pathfinder*.

A Frenchman named Yves de Lage, has just issued under the auspices of the French Academy of Sciences, a "monkey dictionary." It contains the speech, chatter and songs of monkeys. It is not intended for the sure-enough monkeys to use—just for those that are studying monkey language. There is a difference.

If you want to be safe against smallpox, don't wait for it to come round—get vaccinated and have it over.

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*That dire disease, whose ruthless power
Withers the beauty's transient flower.*

—Goldsmith.

VITAL STATISTICS.

In his annual report of 1912 to the State Board of Health, the State Health Officer discusses the question of vital statistics for Florida, and the following extract is taken from his report:

It is to be regretted that Florida is not in the registration area of vital statistics which the United States Census Bureau prescribes. In order to be thus included fully 90 per cent. of the deaths occurring in the State during any year must have been reported and tabulated, and this information the State Board of Health has never been able to accurately secure.

Very early in the life of the Board the legislature, on the recommendation of the State Board of Health, enacted a law requiring that all births and deaths occurring in the State should be reported to the State Board of Health. Various forms were devised and distributed for this purpose, and blanks were prepared so that with very little effort or loss of time those having the knowledge could very easily give the information. The State Board of Health also offered to pay for the reports of births and deaths, not with anything like a large compensation, but sufficiently so to defray postage, and in many instances postage was furnished. Postcards with the desired information on the reverse side were distributed to physicians of the State and others from whom the statute required the reports should come. The effort was fruitless, but not until after persistent attempts to secure the information had failed, did the State Health Officer abandon the plan altogether, for without entering into legal proceedings, it was found to be an impossible task. After giving much thought to it, and carefully weighing all attendant conditions connected with the subject, the question of State registration of births and deaths resolves itself into a proposition like this: If the State desires that Florida shall be included in the registration area as laid down by the United States Census Bureau, and the anticipated results from this acquired knowledge would seem to fully justify the effort and the expenditure of funds, the legislature must authorize the State Board of Health to obtain these statistics in some other way than through the practicing physicians of the State, and the reports must be paid for on a strictly business-like remunerative basis.

Various systems for this purpose are operated in other States, but in each, to whomsoever makes the report, whether designated as clerk or registrar, the compensation is such as will bring satisfactory results. It is estimated that a sum not less than eight or ten thousand a year will be required to secure these reports with any degree of accuracy if the data is to be of value after it is collected and tabulated. It is believed that the information gained will be well worth the effort of the Board and the investment of funds for this purpose. The State Health Officer has not felt warranted in operating any plan other than what the statute prescribed without the sanction of the Board or the authority of the legislature, but it is thought that if the cities of the State having a

populaion of two thousand or over would, by requirements of ordinance, collect reports of births and deaths occurring within the municipality, fully 30 per cent. of the population of the State would be thus covered, and those places making satisfactory returns of this nature would then be in the registration area of the United States. At present Florida has only two cities which are in this area—Jacksonville and Key West, but there is no reason why others should not be.

In the absence of any morbidity reports, it is impossible to say just how much sickness there was in the State during the past year. Looking at the subject of sickness from the viewpoint of business, it is believed that a full knowledge of the extent and character of sickness occurring each week or each month in the State with a statement of length of time lost as a consequence, would be of very material value, for the reason that every day's sickness means a monetary loss to the individual and to the commonwealth; the greater the number of days of physical incapacity for labor, the greater the expense to the citizen; for every sickness, however trivial, is a burden upon the individual. He not only loses in his ability to earn, but he depletes his savings already earned by the drain of numerous extra expenses, which in health would not have to be met. Therefore, if morbidity information for the whole State could be had, an increased interest in the subject of prevention of disease and sickness would be stimulated and the information thus gained must be of lasting benefit to the people of the State. The value of birth and death reports is not underestimated. On the contrary, every report from the Executive Office since the formation of the State Board of Health has dwelt upon the importance of this feature of vital statistics. However, the knowledge of factors which disturb the health of the living and cause prolonged suffering with great monetary expense is no less important. So that both morbidity and mortality statistics are equally of great moment to the commonwealth, and repeated efforts have been made to establish a system and to successfully operate it.

Since the above was written another attempt is being made to collect vital statistics.

Act of 1899 (Chapter 4694), to collect and compile vital statistics, shows that the State Board of Health is given power to collect vital statistics through the municipalities of the State. Acting upon this authority, and after taking the question up with the United States Bureau of the Census, the following plan was adopted, and is now being tried:

(a) That the municipality is to appoint a registrar, who is to be paid for all births and deaths at the rate of 25 cents each by the State Board of Health, provided:

(b) That standard birth and death certificates as adopted by the federal government shall be used (these will be furnished to the municipalities by the State Board of Health without cost);

(c) That the original certificates of births and deaths shall be sent by the municipalities to the State Board of Health, and that a single copy, in a local register provided by the Board and containing all the data on the original certificates, be retained as the local record at the municipal office, the local office to be responsible for the accuracy of the local records which they retain;

(d) That the number of births and deaths reported shall be within 10 per cent. of accuracy;

(e) All municipalities of Florida having a population of 2,000 or above, shall be qualified to immediately supply vital statistics to the State Board of Health, and after going into effect, to be admitted to the registration area of the United States; all municipalities of Florida of 1,000 to 2,000 inhabitants shall be next included in this area, and finally, the entire State.

It is hoped that the towns and cities in the State of 2,000 population and over may be able to furnish these statistics with 90 per cent. of accuracy, so that a major portion of the State, anyway, may be qualified for admission into the Registration area of the Census Bureau.

OF SPECIAL INTEREST TO DOCTORS.

The following report from Dr. Henry Hanson, Senior Bacteriologist of the State Board of Health, is interesting in two particulars: First, Dr. Hanson discusses the probability of lessening of time for quarantine of diphtheria carriers by the use of Lactic Acid Bacilli as a spray, and second, points out the futility of examination of the artesian water as productive of carrying media for the typhoid bacilli. The NOTES hopes that the physicians of the State will read this report over carefully and act upon it, although it is no less important to the general reading public, as giving information on a subject on which there are so many confused ideas:

Report of work done in July: The examinations did not indicate any special prevalence of disease epidemic in the State. We did have the remnants of a troublesome outbreak of diphtheria in Jacksonville, but that has subsided at the present time. The principal difficulty experienced in this was in clearing up the carriers; that is in securing negative cultures from those who had had diphtheria and presumably some who had contracted the diphtheria bacilli, without showing definite symptoms, from their close association with the patients.

In this connection it might be well to mention the discussion on management of diphtheria carriers as brought out at the Public Health Section of the American Medical Association. The treatment of bacilli carriers with the Staphylococcus Aurus has been tried out in a great

many cases. The results in some cases have been good, and, on the whole, it seems to have cleared up the cases very much faster than the old methods of irrigating and gargling the throat with antiseptics. There is, however, an element of danger in the use of the Staphylococcus spray, viz.: that of a Staphylococcus infection of the sinuses. This has led many practitioners to be afraid of using this mode of treatment.

Another line of treatment was suggested by Dr. Wood, of Rochester, Minn., which, if his results can be confirmed, will solve this problem of the diphtheria carrier. He uses a culture of Lactic Acid Bacilli as a spray. These bacilli are grown on a plain agar and after a definite growth is obtained, it is washed off with salt solution and used as a spray in an atomizer. He sprays this into the nasal cavities and throat. Dr. Wood reported that where this had been done the patients cleared up in less than half or one-third of the time which it had taken by other methods. The great point in favor of this mode of treatment is its innoxiousness. There is no danger from infection in this form of treatment, since the Lactic Acid Bacillus is not only harmless, but, as you already know, is used in other forms of medicine, for instance, in gastro-intestinal disorders, such as diarrhoea, etc. The live organism is used in both of these forms of treatment.

I have secured culture from Dr. Wood and expect to prepare suspension salt solutions whenever we come in contact with a troublesome diphtheria carrier. If we find that this method of treatment will prove successful here we will no longer have to argue whether or not a carrier is of great importance, since we can clear such cases up and will not have to consider the individual who, heretofore, has come in for so much contention on account of harboring these germs.

We had, during the past month, the unique experience of examining the brain of a chicken which died with hydrophobia. We found bodies in this brain which were characteristic and which we diagnosed as negri bodies. This chicken came from Tallahassee, and was supposed to have been bitten by a rabid dog.

Another section of our work deserves mention on account of some statements which were made by Dr. Ravanel in the Public Health Section at the meeting mentioned above, viz.: the Public Health Laboratory and examinations of sputum for tubercle bacilli. Dr. Ravanel made the statement that, in a way, the public health laboratory was an impediment in the diagnosis of tuberculosis, because of the large number of negative reports given on sputa examinations. This, in a sense, is true but not altogether. I have often thought of this line of our work and of the unsatisfactory results which we often get. The trouble here is largely in the nature of the sample submitted and the responsibility for this rests with the practicing physician to a great extent. A very large percentage of our samples of sputum are such that we feel quite certain when we received them, that nothing will be found in them, and in most of such cases, we do not find the tubercle bacilli. The physicians usually obtain simply a single expectoration from these patients, which very often is not coughed up from the

trachea or bronchial tubes, but is merely a secretion from the nasopharynx, and the mouth. Naturally, such examinations do not reveal anything and a certain number of the practitioners take the negative report as evidence that the patient is not suffering from tuberculosis but from some other form of bronchial trouble. If we could, through HEALTH NOTES or some other medium, impress upon the physicians the importance of securing proper specimens of sputa for examination, it would largely eliminate this trouble. Also, I think we should impress upon them the importance of not depending upon a single sputum examination and the advisability of frequent, repeated examinations in cases of suspected tuberculosis, especially where the physical findings are at all suggestive. Dr. Ravanel, however, did not mean to say that the laboratories should discontinue examining the sputa because that would result in not making the diagnosis in many cases until the patient was practically in a dying state, while many have been diagnosed through the laboratories sufficiently early to give them a fair chance for recovery. These cases amply justify all the efforts we make in this line of our work and, in fact, justify us in encouraging more work along this line, which, I hope, we can make more satisfactory by repeated suggestions to the various physicians.

In connection with our typhoid work, we find repeated and increasing demands for water analysis without first determining or properly inspecting the source of the water supply to find whether such case or cases of fever have any apparent connection with the said water supply. We have had, during the past month, numerous requests for bottles in which to send water for examination without any greater reason for the request than that somebody thinks possibly the water might not be all right. It seems to me that we might properly require a little more evidence against the various water supplies before we attempt to go ahead with such analysis. I believe that many of the cases in question are such as that reported by Dr. Dobbs recently, and that there is no real reason for making the analysis. Would it not be advisable to require some epidemiological evidence against a water supply before we proceed with the analysis? And, again, the analysis of water in such a case does not mean much unless the water is collected by some person detailed or properly instructed by the State Board of Health. In many of these cases we would be unable to state what importance the results had if they should show fermentation and the presence of bacillus coli unless we had collected the water ourselves or it had been collected by some one whom we absolutely knew to be careful in such work.

JUST WHAT IS "QUARANTINE" ANYWAY?

That may sound like a simpleton's question, but really what is it?

Can you answer? People often clamor for things not knowing what they are asking for, and it may be that "quarantine" is sometimes one of them. A few quarantine laws and customs may throw a little light on it. Let us begin with maritime quarantine.

Under the federal laws, when a vessel arrives from a foreign port that is infected, it is "in quarantine." No one has to put it in quarantine—it is already there. It comes in flying a yellow flag. Only the pilot is permitted to board the vessel to bring it in, and he is not permitted to leave it till it is released from quarantine. No one has told the captain that the vessel was quarantined—he just seemed to know and obey. The vessel comes into port flying the yellow flag. And there it waits till the quarantine physician comes aboard, and examines the vessel and the crew and, if found satisfactory, releases it. Then the yellow flag is hauled down, and the vessel proceeds to dock. The thing to note in this connection is that there is no *guard* with a gun standing ready to shoot if the vessel doesn't stop. It is nothing but the majesty of the law that restrains him. And yet he is in quarantine. He is in quarantine because the law provides that under these conditions he is quarantined till released. He doesn't have to have sickness aboard to be quarantined. He doesn't even have to come from an infected port. Whenever the law provides that he is in quarantine, he is in quarantine.

But suppose the master of the vessel violates the law, and does not fly the yellow flag as required by law—does not observe the quarantine, in other words. Then he is amenable to the law. And no one ever accuses the government of not quarantining the vessel, we only accuse the master of the vessel of breaking the quarantine.

Of all the vessels that enter and leave our ports every year, some coming within quarantine restrictions, and some not, not one guard is ever employed to keep the quarantine law obeyed. That is quarantine, as seen by the federal government.

Now let us see what "Quarantine" means in, say, a municipal government. We will begin for example with Altoona, Pa. The regulation says :

Rule 83. If the diagnosis reveal smallpox, scarlet fever, or diphtheria, the health officer shall immediately post, in the most conspicuous place, on the outside of the residence of the patient, a placard, stating the name and character of the disease, and warning the public and the occupants of the house against breaking quarantine. The Board of Health may, at its discretion, quarantine a house containing a patient suffering from any other contagious and infectious disease.

That is to say, in the city of Altoona, Pa., when a placard is placed upon the house, it is in quarantine. No guard—just the majesty of the law to stand guard, and the house is quarantined. That is quarantine as seen by a Pennsylvania city.

The essential point is that quarantine does not presuppose a guard or guards. That is not a consideration at all. The power that is supposed to enforce quarantine is the law, and the law only.

There is, so far as I am aware, no law that provides for guards. Certainly not in the U. S. P. H. Service. Certainly not in the State of Florida.

The question of "guards" then is entirely separate and distinct from quarantine. Quarantine is a legal procedure. It has behind it the majesty of the law to enforce it.

When smallpox occurs in a family in Florida, and the State Board of Health is informed of it, the house is placarded, and the unvaccinated public is warned against entering, and the patient is warned against leaving the house. *This under the law is quarantine. A patient so managed is under the law quarantined.* If he breaks the law, his action should be treated as any other infraction of law. He should be prosecuted. And he should be prosecuted by the legally constituted prosecuting attorney of the county in which the infraction occurs. Anyone having cognizance of the fact should report it to the prosecuting attorney. It is his business then to prosecute the offender.

"THIS IS ANOTHER WAY TO MAKE GERMS USEFUL".

Speaking of useful germs, it is a fact that they are very, very useful and we would be in a bad way without them. We couldn't make any wine, or beer, or whiskey, without germs, for that is what ferments are. These ferments change the sugar into alcohol, and that is called alcoholic fermentation. We couldn't make vinegar without them, for that is another process of fermentation. The ferments effect changes producing acetic acid, and that is called acetic acid fermentation, and that is the way vinegar is made. Vanilla is made from the vanilla bean, but the bean has to be fermented, or we would have no vanilla. Leather can not be tanned, or flax retted but by the aid of germs. Milk would not sour, and cheese could not be made, but that germs bring it about. The yeast that is used for making a loaf of bread is a mass of germs. They attack the starch in the flour and liberate a gas, which fills the dough with tiny bubbles, and causes it to "rise" as we say. A disease-producing germ of the gas-producing kind is known and sometimes gets into a wound, and causes the part to swell like the rising of bread.

But most important of all the germs perhaps is that great group, which tears down vegetable and animal tissue, after it is dead, and

nitrifies it, and makes it suitable for plant food again. The amount of life on the earth is determined largely by the activity of this class of germs.

PELLAGRA IN THE UNITED STATES.

As there seems to be a confused idea in regard to the increase of this disease in the United States, and some of the daily press are reporting that the Surgeon-General of the United States Public Health Service has said that it is on a decided increase, the following taken from the annual report of the United States Health Service, for 1912, will be interesting to the readers of the NOTES:

Pellagra continues present in certain sections of the country. Its greatest prevalence is in the States south of the Ohio river, and east of the Mississippi. Cases, however, have been reported in practically every State. Whether the disease is increasing or not can not be told in the absence of a record of the occurrence of cases. Undoubtedly the disease is being recognized more frequently than in former years, due to the greater familiarity of physicians with the symptoms. The disease should be made notifiable in all States, so that its relative prevalence might be known. Information of its relative frequency of occurrence in different localities and under varying conditions would undoubtedly aid materially in determining the cause of the disease.

Pellagra seems to be largely limited to the tropical and warmer portions of the temperate zones. Furthermore, it appears to occur commonly in certain localities which are often limited in extent, and in some instances have rather sharply defined boundaries. In other words, the disease occurs frequently in what must be considered well-defined endemic areas. Whether these areas are determined by the topography, the flora, the fauna, climatic conditions or the special manner of life, or customs of the inhabitants remains to be determined, and when this has been done the discovery of the cause of the disease will without doubt be near at hand.

The disease occurs at times in what appear to be distinct outbreaks. It does not, however, appear to be contagious; that is, spread by contact with the sick. The theory is held by some that it is spread by a biting fly or other insect. This, however, has not been satisfactorily shown to be so.

In Italy the importance of pellagra economically and as a sanitary problem has been officially recognized. In certain sections of the United States of considerable size the disease is perhaps as serious a problem as in Italy and as worthy of the most careful study.

"I wish to buy a gift for my husband."

"Yes'm," said the polite floorwalker, "The 10-cent counter is ever yonder by the window."—*The Pathfinder*.

NEW SEWAGE LAW.

The attention of the readers of the NOTES is invited to the following law enacted by the last legislature—April and May, 1913. It is to be regretted that “sewerage” is so often used when the word “sewage” is what is meant, even after the original draft of the measure was corrected, for sewerage is a system for the disposal of sewage which is the waste material itself:

CHAPTER 6443 (No. 23), LAWS OF FLORIDA, 1913.

AN ACT to Preserve the Purity of the Underground Waters of the State of Florida for the Protection of the Public Health.

Be It Enacted by the Legislature of the State of Florida:

SECTION 1. That the term “Underground Waters of the State,” when used in this Act, shall include all underground streams and springs and underground waters within the borders of the State of Florida, whether flowing in underground channels or passing through the pores of the rocks.

SECTION 2. No municipal corporation, private corporation, person or persons, within the State, shall, after the passing of this Act, use any cavity, sink, driven or drilled well now in existence, or within five miles of the corporate limits, of any incorporated city or town, or within any unincorporated city, town or village, or within five miles thereof, for the purpose of draining any surface water or discharging any sewerage into the underground waters of the State, without first obtaining a written permit from the State Board of Health.

SECTION 3. Every such permit for the discharge of sewerage, or surface water, shall be revocable or subject to modification or change by the State Board of Health, on due notice, after an investigation and hearing, and an opportunity for all interests and persons interested therein to be heard thereon; said notice or notices being served on the person or persons owning, maintaining or using the well, cavity or sink, and by publication for two weeks in a newspaper published in the county in which said well, cavity or sink is located. The length of time after the receipt of the notice within which it shall be discontinued may be stated in the permit. All such permits, before becoming operative, shall be filed in the office of the Clerk of the Circuit Court for the county in which such permit has been granted.

SECTION 4. For the purpose of this Act, sewerage shall be defined as any substance that contains any of the waste products or excrementitious or other discharges from the bodies of human being or animals.

SECTION 5. Every individual, municipal corporation, private corporation or company, shall discontinue the discharge within the corporate limits or within five miles of the corporate limits of any incorporated city or town, or within any unincorporated city, town or village or within five miles thereof, of sewerage or surface drainage into any

of the underground waters of the State within ten days after having been so ordered by the State Board of Health.

SECTION 6. Any municipal corporation, private corporation, person or persons that shall discharge sewerage or surface drainage, or permit the same to flow into the underground waters of the State, contrary to the provisions of this Act, shall be deemed guilty of a misdemeanor, and shall, upon conviction, be punished by a fine of twenty-five (\$25.00) dollars for each offence, and the doing of the prohibited Act for each day shall constitute a separate offence, or by imprisonment not exceeding one month, or both, at the discretion of the court.

SECTION 7. All laws or parts of laws in conflict with the provisions hereof are hereby repealed.

Approved June 7, 1913.

THE ART OF KEEPING COOL.

Keeping cool in hot weather is no easy job. In fact, few people can hold that job down to their own satisfaction. But it is a proposition that we shall all be up against for the next three or four months, so we may as well try to make the best of it. Here are some valuable suggestions which have helped others. They may help you.

First of all, don't worry about the hot weather. It is going to come, and all the worrying you can do will not make it any cooler. Reconcile yourself to hot weather and nearly half the battle is won.

The next thing to do is to dress for hot weather. Wear light colored, light weight, porous clothing. Remember that tight clothing and tight shoes, particularly in summer, are for a few women only. All men and wise women will leave such things strictly alone.

Plenty of water is really the best thing known for hot weather. Drink lots of it. Bathe yourself in it inside and out. Drink until you perspire freely. It is not a disgrace to perspire. It is an aid to health and comfort. Perspiration on your skin is nature's own way of keeping you cool.

Regulate your diet to fit the season. In hot weather leave off meats, fats, gravies, butter and other heat producers, and eat fruits and vegetables in abundance. By drinking an abundance of water you can keep your sewer system flushed out. Remember, you never will be comfortable, particularly in hot weather, if you are constipated.—*Press Service, North Carolina State Board of Health.*

A little girl had sent back her plate for turkey two or three times, and had been helped bountifully to all the good things that go to make a grand Christmas dinner. Finally she was observed looking rather despondently at her unfinished plate of turkey.

"What's the matter, Ethel?" asked Uncle John. "You look mournful."

"That's just the matter," said Ethel. "I am mor'n full.—*Successful Farming.*

"TYPHOID AND THE FLY."

The prevention, even the eradication, of typhoid fever is one of the most important matters before the people of Florida. The State has no greater asset than its healthfulness and no greater menace to that healthfulness than this insidious disease. Why should hundreds of lives be sacrificed every year when they might be saved by the exercise of simple and inexpensive cautionary methods? These methods are based upon proven facts and common sense.

The disease is spread by flies that carry the germs of infection. These germs come from persons who have or have had the disease. They are developed in the intestinal tracts and become available for distribution from the excreta of such individuals. Flies coming into contact with such evacuations carry the germs and lighting upon food leave them there, to be taken into the digestive systems of other individuals. Disgusting, isn't it?

The germs increase rapidly in their new lodgings and the doctors soon have another case of typhoid and another source of infection is started. Recent bacteriological investigations have established the fact that the conditions most favorable for the breeding of flies exist in the excreta of horses. The conditions next favoring such breeding are in the stools of human beings. Where such evacuations are from typhoid patients, the maggot of the fly becomes infected with the germs and remains all through its natural life a source of danger.

The warning to be drawn from these facts is that the earth closet should be so thoroughly screened that the entrance of the fly through the smallest opening or hole shall be prevented. Guard against the contamination of the fly at all hazards and then, for the sake of additional safety, kill him.

It has not been determined how long typhoid germs may remain in the system of the patient, even after recovery from an attack of the disease. Cases are on record in which an individual has carried them in his system for years and has been a constant source of danger and infection to others, without ever having had the fever himself. It is certain that weeks, perhaps months, may pass even in the ordinary individual who has had the disease, before he may cease to be regarded as a menace to the community.

As flies migrate of their own accord over long distances or are carried in railroad trains, automobiles or other vehicles, a single source of infection may be dangerous over a wide section. It is perfectly evident that the danger is increased in closely settled communities. It

is equally certain that the danger decreases where the population is less dense, but nowhere is it a danger to be disregarded.

What is the remedy?

First, prevent the fly from becoming infected.

Next, in the popular phrase—Swat the fly. Kill him wherever you find him. Keep him out of the house and particularly out of the kitchen and dining room, where food is prepared or eaten. Keep him away from foods, especially those that are to be eaten uncooked. No one knows where any fly has been or how terrible a menace he may be to health or to life itself. But the important thing is to prevent him becoming infected.

In order to do this, screen all earth closets. Screen them so thoroughly that no fly can get in through any little opening left carelessly in putting up the screen. It doesn't cost much to have this work done properly, and not much to see that the screen is always tight and serviceable. But whatever the cost, it is small in comparison with the doctor's bill, with weeks or months of lost time and diminished energy and earning power, small indeed, compared with the value of a human life.

This is a homely subject, revolting even when it is studied closely and carefully, but its importance can not be overestimated. It is too serious to be trifled with, too serious to take any chances on. Neglect it and you are gambling with life as the stakes, and the odds are against you.—*Press Service, State Board of Health.*

"Health is one thing that money can not buy." How that has been hammered into the generations of men! And now comes science and says that is not true. The motto of the health department of New York is this: "Public health is purchasable, and within natural limitations a community can determine its own death-rate." The Children's Bureau of the national government agrees. In a recent bulletin it says that in the last ten years health officers have brought the average death-rate in cities to a point lower than that in villages. In New York and Philadelphia they reduced the mortality among babies by nearly half in those parts of the cities where they concentrated their work.—*Youth's Companion.*

"What you need, madam, is oxygen. Come every afternoon for your inhalations. They will cost you \$4.00 each."

"I knew that other doctor didn't understand my case," declared the fashionable patient. "He told me all I needed was plain fresh air."—*The Pathfinder.*

A BRIEF COMPENDIUM OF PUBLIC HEALTH.

1. Know you that a communicable disease comes only from the germ of that disease. Kill, therefore, or render harmless the germs and thou dost prevent the spread of that disease.

2. Sleep with thy windows open, for health and security come with the fresh air and disease doth lurk in close rooms.

3. Give thou thy body exercise, not in excess, but in moderation, knowing that thereby thou dost build a wall of resistance against thy foe.

4. Eat thou in temperance, for thy stomach will rebuke thee if thou dost overwork it.

5. If thy neighbor has typhoid, have thou not it. But screen thou thy windows, keep the flies without, boil thy water and eat only those things that are well cooked.

6. Remember thou that oftentimes thy water giveth thee the fever. Protect thy water and it will protect thee.

7. The excrement of man spreadeth disease. See thou that thy privy is safe from flies and that thy neighbor violates not the law.

8. If thy child have diphtheria, think not it can be cured save by antitoxin, and give thou the antitoxin quickly.

9. If the health officer quarantine thy household, diligently obey his word, for thou must protect thy neighbor from thy diseases, if thou wouldst protect thyself from thy neighbor's ills.

10. Give not stale milk to thy baby, for it is poison.

11. Know that the milk thou giveth thy child is clean and fresh and much care is removed from thy household.

12. Uphold thou the hands of those who would prevent disease, for they would lengthen the span of thy years and make happy thy lot.
—*Virginia Health Bulletin.*

STATISTICS.

SMALLPOX.

Reported cases of smallpox in Florida, July, by counties (665 vaccine points distributed):

Columbia	2
Duval	38
Escambia	8
Hillsboro	3
Lee	1
Manatee	1
Polk	8
Putnam	4
Santa Rosa	1
St. Johns	5

Total cases, July 71

Total cases to August 1, 1913.....1,040

RABIES.

Report of Rabies in Florida, July, 1913, by counties:

	<i>No. persons treated.</i>
Alachua	2
Duval	4
Hamilton	1
Hillsboro	1
Orange	1
Total persons treated	9
Total number of persons treated to August 1, 1913.....	85

GLANDERS.

Report of outbreaks by counties, July, 1913.

Duval	9
Orange	1
Total number of cases.....	10
Total cases to August 1.....	34
In human beings to August 1.....	1

HOG CHOLERA (*Distribution of Serum*).

Amount hog cholera serum distributed, July.....	37,250 c. c.
Amount hog cholera serum reported administered by Agents, July.....	31,745 c. c.
Number hogs treated, July	1,464
Total weight hogs treated, pounds.....	95,150

TICK ERADICATION.

During July the following counties were visited by Tick Eradication Agents of the State Board of Health: Levy, Lafayette, Putnam, Alachua, Hillsboro, Pinellas.

Cattle dipping vats constructed, July (by counties):

Alachua	2
Marion	1
Total number of vats built, July.....	3
Total number of vats built to August 1.....	20

SPECIMEN EXAMINATION, BACTERIOLOGICAL LABORATORIES.

	Jacksonville.	Tampa.	Pensacola.	Total
Animal Parasites	206	147	50	403
Diphtheria	281	34	24	339
Gonorrhea	32	41	39	112
Malaria	255	268	51	574
Pathological	6	6	..	12
Rabid Dogs	10	2	..	12
Tuberculosis	120	87	39	246
Typhoid Fever	182	118	41	341
Water (for Sewage Contamination)....	6	..	1	7
Miscellaneous	41	28	83	152
	1,139	731	328	2,198

Grand total number specimens examined by State Board of Health Laboratories, July, 1913, 2,198.

ANNOUNCEMENT.

Dr. Hiram Byrd wishes to announce that he has severed his connection with the State Board of Health of Florida, to become associated with the management of Grand View Sanitarium for Tuberculosis; summer home, Newport, Tenn., winter home, Port Orange, Fla.

GOOD NEWS.

Prof. Moore, of the United States Weather Bureau, has discovered that there is no such thing as an "equinoctial storm." Perhaps we only think it is storming.

"Smithers was badly hurt in that trolley smash-up, wasn't he, doctor?"

"Very. We had to amputate both legs."

"How sad! Will he pull through?"

"Oh, yes; we'll have him on his feet again in less than three months."
—*The Pathfinder.*

"Do you keep a cow?" asked the visitor of small Dorothy.

"No, ma'am," was the reply, "but we keep two cats and a baby."—
The Pathfinder.

Any closet is sanitary that is fly proof.

FLORIDA Health Notes



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Jacksonville.

BRANCH LABORATORIES:

State Board of Health Building
Florida Avenue and Constant Street, Tampa.
City Hall, Pensacola.

Sent to any address in the State for the asking.

If you receive it without asking, it means that someone else has requested it for you.

When you change your address drop us a card.

When giving change of address, give both the old and the new.

Anything you want to know about the public health we will try to tell you.

Any information you want about communicable diseases of domestic animals we will help you to get.

Address communications to Jacksonville, Fla.

Screen your house against typhoid and malaria.

DOCTORS OF FLORIDA! PLEASE READ

This may sound "chestnuty," and some one may also be inclined to "ring the bell" on the Board, but here goes for one more time: Please put sufficient postage on the specimen containers and slide envelopes sent to the laboratories to meet the requirements of the United States mail. At least six cents should be put on each container. Failure to do this will cause a "hold up" and non-delivery at the postoffice, and delay—perhaps, too, a non-report. It is certainly worth six cents to a doctor to know whether his patient has diphtheria, malarial or typhoid fever, or tuberculosis. If you do not intend to prepay sufficiently the postage, don't complain if you do not get quick service. One day this past month there were forty-five containers "held up" at the postoffice for want of sufficient postage, and yet in that same day's mail several complaining letters were received at the executive office, finding fault because no report had been made on specimens sent several days before. The laboratories are ready and cheerfully willing to assist the Florida doctors, but the doctors must do their part in the co-operative work and the part that is requested of them is not to delay reports of their specimens by insufficient postage when mailing them.

THE COST OF LIFE

It costs more to live than to die.

It costs more, but we considerably call that person insane who prefers death to life. Disease costs more than health. The sick, the invalid, are deprived of earning power; their illness is an expense and they are a burden to their friends or their families and a continuing tax upon their sympathies. If a plain statement of the case be not considered too cold-blooded, death brings an end to their physical suffering, and it brings an end to the cost of maintaining an unproductive member of society. The cost stops with death.

Men prefer health and strength, the normal use of their mental and physical powers, rather than to be deprived of any of them, yet no one thing is more distressing to the modern sanitarian than the constant exhibitions of careless disregard of those things that make for health. Without being or being considered a "crank" on matters of health, it is possible for any man or woman of adult years to enjoy uninterrupted use of his or her physical powers at their highest development. Note

that the limit of these powers is personal to each, for some get a start in life with the handicap of an inherited weakness or disfigurement, a punishment put upon innocence for the sins or neglects of preceding generations. But a kind and wise Providence removes a large percentage of these handicapped by inheritance in the earliest years or months of their existence.

Nature, left to herself, is working constantly to better the race, to raise the standards of physical perfection. The law of the survival of the fittest is always in operation among human beings, as among the animals of the jungle. But this law is almost as constantly thwarted in its operation among human beings by their stupidity or their thoughtlessness, until the physically perfect specimen of the adult manhood or womanhood is rare almost to the point of being a curiosity.

Science is working constantly toward the improvement of the race, and toward making that improvement permanent and universal and uniform. Medical science is working successfully in pointing out the causes of disease and how to avoid them. Great as have been its advances in curing disease, its efforts to prevent it have been even greater, and they have been of greater value to the human race. It has worked to reduce the percentage of sickness, to prolong the life period by safeguarding the normal strength that every individual starts life with as a part of his equipment, a part of his capital.

But in these efforts the greatest obstacle to advance is the indifference of the people themselves. This indifference—carelessness is another name for it—is almost as dangerous as ignorance.

It needs only to be illustrated to be understood. Medical science has established beyond the reach of argument, that the germ of typhoid fever exists in the excreta of those who are suffering from that disease; that this germ is carried from this source by the common housefly and deposited in or upon the food that is to be eaten by other human beings and that by this process is this dread affliction spread and kept alive in the human race. The obvious remedy, that of keeping the fly away from this infection and also away from the food, has been pointed out and emphasized by the doctors. It has been preached so constantly and continuously that every intelligent man has heard it a thousand times. The fact, no longer a theory, has been proved in every community in the State of Florida.

To reduce this danger in one of the largest cities in the State, its health department proposed a municipal regulation to screen all surface closets that, on account of local conditions, could not be destroyed or removed. The disease had assumed epidemic proportion in one or more years previously in this city, but the proposed precautionary measure was fought by the authorities, who believed their own wisdom superior to that of their trained scientist, until strenuous persistence by the local health board, backed by the influence of the State Board, brought about its enactment. The result was the reduction in the number of cases of typhoid by nearly one-half in the following two years, and incidentally a lowering of the city's death rate by twenty-three per cent in three years.

There are those, even in progressive Florida, who ridicule vaccination as a preventive of smallpox, and their criminal responsibility for promulgating such unbelief varies in proportion to their influence.

There are those in Florida—some of them have known the horrors of yellow fever and have seen friends, brothers and sisters perhaps, falling about them to speedy and almost certain death—who repudiate the belief that the germ of this dreaded disease is carried by the mosquito, even though the doctors who have taught this theory have proved its correctness by banishing the pestilence from Florida and the islands of the Caribbean.

There are some, even among the medical profession of Florida, who still hold to the long disproved theory that malaria has its origin in the miasma of foul and undisturbed waters.

There are some who disbelieve in the germ theories of disease transmission—although these theories have been so long and so thoroughly established that they have ceased to be theories.

It is a question whether there exists a person more to be pitied than the man of ordinary intelligence, who holds his inner consciousness or his instinct or his stubbornness superior to the accumulated and increasing knowledge of the scientific world, and who persists in holding to disproven, dangerous, even death-bringing theories of disease origin. If there is a man more to be commiserated than he, it is the one who, with the knowledge of exact sanitary science within his reach—nay, thrust upon him—goes along his thoughtless way, trusting that a kind Providence, that has brought him to the years where discretion is presumed to have had a chance to guide his way, will render him immune to the working of nature's laws.

The path to health, even though it costs more to live than to die, is plain. It is being made plainer every day, and the wayfarer, though he may be foolish, need not stray from it, if he really cares enough about his life to walk in that way.

The world is growing better; it is growing healthier because the regard for sanitary methods of living is stronger in the intelligent community today than ever before, because men take better care of their bodies, because they are listening more carefully to the warnings of science. They are taking better care of, are paying more attention to their physical welfare, and are realizing that without the sound body, kept sound by observing nature's laws, the mind, the brain is handicapped into uselessness.—*Press Service, State Board of Health.*

READ AND HEED

Florida doctors and other "lovers of the human kind," who value a human life above that of a dog, please read the following extract from the monthly report of Dr. Henry Hanson, Senior Bacteriologist of the State Board of Health, to the State Health Officer, on Central Laboratory work:

In connection with the work of rabies, I wish to ask that you again kindly call the attention of the physicians and the public in general.

through the medium of HEALTH NOTES, to the very great importance of not killing a dog as soon as the individual is bitten unless the symptoms of hydrophobia are absolutely unmistakable. We have had three unfortunate cases during the past month in which children were rather severely bitten, the animal killed immediately and the head subsequently sent to the laboratory for examination. In none of these cases were we able to find Negri* bodies and consequently could not state that the animal was rabid. The chances are that the animals were not rabid but there is also the very unpleasant possibility that they may have been killed at the very onset of the disease and in such case or cases the brain material of the animals in question would not show Negri bodies on microscopical examination. The saliva is virulent for three to ten days before the dog shows definite symptoms of hydrophobia and before definite Negri bodies are found in the brain. It, therefore, becomes a matter of the greatest importance to urge people not to destroy such animals immediately. In the cases which we have had during the past month, the history indicated that several of the dogs were simply vicious brutes and that they very probably did not have rabies. However, it leaves us with a disagreeable uncertainty in the premises and the only absolutely safe course we can pursue in instances of this kind is to tell the people that the responsibility lies with them and if they wish to be on the safe side they must take treatment. This is not comforting advice to give, because the many unfortunate victims can testify to the painful annoyance of being obliged to submit to the Pasteur treatment.

For the reasons given we should advise "Do not kill the dog until you have definite evidence against him, either positive or negative." A dog which has rabies will not live more than three to five days; if a dog lives ten days after biting you without showing any definite symptoms, you are absolutely certain that he has not got rabies.

As you notice from the report, we have again been called upon to witness the death of a human being who died because the cur dog seems to enjoy a sacred right to roam the streets and inflict any damage which he sees fit. This man was bitten on the hand some time ago but did not take treatment, the dog was not taken up and no examination was made of the brain in this case. The man died with typical hydrophobia.

*Negri bodies are microscopic organisms found in certain portions of the brain, denoting rabies.

THE MANUFACTURE OF ICE CREAM

(Sanitary Measures in Cuba in Regard to the Manufacture and sale of Ice Cream. Translation from a Havana Newspaper.)

In view of certain irregularities in the manufacture and sale of ice cream in several places in this city, Dr. Moralez Lopez was commissioned by the Health Department to undertake a thorough investigation in regard to everything concerning said industry.

The above mentioned doctor has presented a detailed recommendation which has been approved of and is couched in the following terms:

First: All places devoted to the manufacture of ice cream shall be entirely separated from places devoted to other uses, such as kitchens, pantries, coal bins, dormitories, and toilets.

Second: The manufacture of ice cream will not be allowed in tenement houses.

Third: The doors and ceilings of places where ice cream is made shall be thoroughly painted and all walls whitewashed; the floors shall be of cement or tile and the walls to be a height of $4\frac{1}{2}$ feet cemented or tiled. All doors to be screened.

Fourth: The freezers, vats and other utensils used, shall be thoroughly cleansed every day before and after using and rinsed in boiling water.

Fifth: All tables on which extracts or flavors are prepared and fruit handled shall be of marble in order to insure thorough cleanliness.

Sixth: All fruit stands where ice cream is sold shall be provided with a sink and running water for the washing of glasses, spoons, etc., used by the public.

Seventh: Persons employed in the manufacture as well as the sale of ice cream, must be in sound health and must be provided with a certificate to that effect.

Eighth: Persons employed in the manufacture or sale of ice cream shall not be employed in any other class of work while working at the former. Where wagons drawn by horses or mules are used in sale of ice cream on the streets the driver or person handling the reins shall in no case serve customers. All wagons shall be in a thorough state of cleanliness, should be frequently painted and the name of the owner plainly shown.

Ninth: Persons employed in the manufacture or sale of ice cream shall be required to wear clean clothes and to use aprons in their work.

Tenth: All pastry shall be kept in glass jars or painted tin boxes which should close hermetically, and wrapped in tissue or paraffine paper in quantities such as are usually sold to each customer, in order to avoid constant handling.

Eleventh: The public is cautioned to destroy the packages known as "Glacé" once contents have been removed, to avoid their being used again.

Twelfth: All fruit used shall be sound and ripe and thoroughly washed before being peeled for the preparation of flavors.

Thirteenth: In order to manufacture or sell ice cream the above requirements must be complied with and the Health Officers shall issue certificates testifying to that effect.

Fourteenth: Only such coloring matter as specified in Article No. 53 of the Sanitary Ordinances, will be allowed.

Fifteenth: Violations of the above will be fined according to Article No. 894.

TO BE SURE

Another nail driven, clinched and riveted against the opponents of serum therapy; in other words, and in plain English the anti-vaccinationists:

There has not been a single case of typhoid fever in the tent encampments of 12,000 regulars in Texas during the six months of their existence. Nor has there been a case of smallpox. To repel these dreaded diseases the army surgeons have used vaccine. So successfully have they warred on mosquitoes that only a few cases of malaria have been reported. There is no pest of flies. If the regulars were ordered on foreign service they would be sound and fit almost to a man. There would be no repetition of the horrors of Spanish war camps, so far as they were concerned. Great credit is due the medical department, because the only ground available for the camps in Texas was salubrious neither in site nor surroundings.—*New York Sun*.

WHY DO MARRIED MEN LIVE LONGER?

The relation between marriage and longevity is not a subject to which many people give any thought, and yet according to a bulletin issued by the New York Board of Health, it should prove of keen interest. Generally, it is believed that those in single "blissedness" free from all cares and worries should live longer than their married brethren. This, according to no less an authority than Professor Wilcox of Cornell University, who is author of the bulletin, referred to, is not the case. In fact just the reverse. He shows that from 20 to 30 the death rate among married men is 4.2, while among single men it is 6.6. From 30 to 40 the death rate among married men is slightly under 6, while among single men it is nearly 13. From 40 to 50 there is an even greater difference. The death rate among married men is 9.5, whereas among single men it is 19.5. From 50 to 60 there is less divergence in the death rate, but there is a difference in favor of the married of nearly 11 deaths per year per thousand. Even from 60 to 70 the death rate of married men is less than 32, while that of the single men is 51.

Reasons for these are no doubt many and varied, the main one being, possibly, because the married man lives a steadier life.

Professor Wilcox suggests a variety of reasons for the married man's better chance of longevity. "Undoubtedly," he says, "the lower death rate among married men is partly due to the fact that as a rule those who are in good health are ready to marry, while those with more delicate health especially if suffering from any definite ailment, are not willing to assume the burden and responsibility of a family. Another factor quite as surely is that married men live much more regular lives as a rule, and consequently avoid many of the dangers of irregular living. Besides feeling their responsibility to others, they do not take such risks of life or illness and as a rule avoid venturesome expeditions and dangerous occupations."

The *Macon Telegraph* goes further into the statistics and finds that marriage seems to be a somewhat less certain life preserver in the case of women. The same statistics show that from 20 to 30 married women have a higher death rate than single women, the proportion being about 5 to 4. But the death rate of single women is higher from 30 to 40 as well as for all the other periods up to 80.

The *Journal of the American Medical Association* also delves into another phase of the subject and finds that the mortality rate among men who have been married, but have lost their wives through separation or death, is greater than among married men or among bachelors.

"Indiscretions incidental to repeated celebrations of liberty regained?" would be the easy query of the cynical bachelor or divorced men. But in the opinion of the *Journal of the American Medical Association* there is a positive influence for longevity in the supervision of a married man by his wife, and in his tendency to take better care of himself because of his having responsibilities, than he would if he were unattached. Therefore, "the man who loses his wife, loses, in part, his hope of longevity."—*Key West Morning Journal*.

A NOTE REGARDING THE APPARENT CURE OF TWO LEPERS IN MANILA

Two patients who had been confined to the San Lazaro Leper Hospital on account of leprosy have been pronounced apparently cured and discharged from that institution on probation.

The first case was that of a male Filipino, aged 27, who was admitted to the San Lazaro Leper Hospital, Manila, May 29, 1909. On admission the case clinically showed thickened reddish spots on the nose and thickening and discoloration of the lobe of the right ear. Scrapings made from the lesions showed lepra bacilli. He received vaccine treatment at intervals, beginning August, 1909, but at the expiration of one year no change was noted in his condition. From September, 1910, to November, 1910, crude chaulmugra oil was given by mouth in increasing doses. On account of nausea the administration of the oil by mouth had to be discontinued.

The case showed evidences of improvement. On November 10, 1910, chaulmugra oil combined with oil of camphor and resorcin was given hypodermically. By May 6, 1911, the lesions above described had disappeared and leprosy bacilli were not found in repeated microscopical examinations. The hypodermic treatment was continued and microscopical examinations were made at frequent intervals, but these were always negative. On June 11, 1913, a most careful clinical and microscopical examination was made of the patient, which resulted negatively for leprosy, and as the patient had now been apparently cured for a period of over two years he was discharged on probation.

The other case was that of a Filipino woman, aged 22, who was admitted to San Lazaro Leper Hospital, Manila, January 7, 1910. Clinically this patient presented a suffused countenance due to generalized infiltration. There were red macules over the cheeks, forehead

and chin. Scrapings made from the lesions and examined microscopically were positive for leprosy bacilli.

Upon admission this patient was placed upon the vaccine treatment for a period of five months, but at the end of the first month after her admission crude chaulmugra oil by mouth was given in addition to the vaccine.

After the second month the patient began to improve rapidly, and on May 6, 1911, leprosy bacilli could not be found on microscopical examination. During May, 1911, on account of the nausea caused by the oil, its use by mouth had to be discontinued. Hypodermic injection of chaulmugra oil combined with camphor and resorcin was then begun. This treatment was continued, and frequent microscopical examinations were made from time to time, all of which resulted negatively. The last examination, both clinical and microscopical, was made on June 11, 1913, when no further evidences of leprosy could be found. The patient was therefore discharged from the hospital on probation.

It is not known whether the vaccine treatment had any influence in the cures. There are at present time a number of other cases at the San Lazaro Leper Hospital that have been negative for a period of 22 months, which, upon admission, presented more marked evidences of leprosy than the cases mentioned above, yet they received only chaulmugra oil either by mouth or hypodermically, or in both ways.—*Victor G. Heiser, M. D., in Public Health Reports, September 5.*

THE BIOLOGY OF SEWAGE PURIFICATION AND THE FUNCTION OF THE SEPTIC TANK

(By George T. Palmer, B.S., Sanitary Research Laboratory of the Massachusetts Institute of Technology.)

So extensively has the septic tank been advertised as a method of sewage disposal within the past few years that the mistake is apt to be made of regarding this process as a complete and satisfactory method in itself. A slight familiarity with the exact function of the septic tank will readily convince one that such is not the case.

Let us first understand the purpose of any sewage disposal method. Sewage is merely that portion of a community's waste matter that is carried away through underground sewers. While street wash, waste water from sinks and bath tubs, and manufactured wastes are generally present in a city sewage, the offensive element is partially decomposed urine and feces from man and animals. Matter of this character is odoriferous and repugnant to the senses of sight and smell. Furthermore, it may contain the germs of disease from the bodies of people contributing to the sewers.

For these three reasons, therefore, sewage must be taken care of, (1) so that the disease germs will not have opportunity to come in contact with man and animals, (2) so that the smell will not reach populated districts, and (3) so that the characteristic paper and sediment will not betray the former associations of the liquid.

Fine screens or sedimentation basins will remove the coarser material that offends the eye and gives sewage its muddy appearance.

The smell may be obliterated by oxidizing the offensive matter. Free access of air is therefore provided by letting the sewage trickle over several feet of crushed stone, clinker or any coarse, not easily broken or soluble material. Or sewage may be run through sand where active oxidation is assisted by some straining action. The sewage may even be sprayed into the air or have air bubble through it.

The diseased germs are partially removed during the various processes just mentioned, but to reduce their number to a minimum and make the sewage effluent as low in bacterial numbers as the body of water into which it empties, some very fine straining method must be used or else a substance added that will act as a poison to the germs.

All sewage disposal plants are, therefore, designed to accomplish these three objects to some degree, and the ideal plant is one that will remove the suspended matter, oxidize the soluble matter, and kill the disease germs.

It would necessitate a vast amount of tabulating to record the various devices and combination of devices now in use in sewage disposal practice. It is safe to state, however, that no two communities have identical systems, either in the devices used or in the degree of purification effected.

Just what part does the septic tank play in the purification problem? The septic tank is merely a container that facilitates the septic process. This septic process consists in bacterial activity in the absence of oxygen resulting in the conversion of solids to liquid. When sewage is left to stagnate, the oxygen dissolved in the water is first used up in burning (oxidizing) the simple carbonaceous and nitrogenous matter present.

Sewage in the first place is not a simple substance, but must first be eaten and split apart by the bacteria. In passing through the bodies of the bacteria it is more elementary than when it entered. Similarly human excrement is more elementary in character than the food that is eaten. The first group of bacteria passes the food on to another group which in turn selects desired materials and then passes it on to the next class. As this material becomes less complex it more readily unites with oxygen either to be "burned" and pass into the atmosphere as a gas, or to remain in solution as a carbonate, sulphate or nitrate. Solid matter thus is partially changed over to a liquid and gaseous condition.

But why is it necessary to exclude oxygen during this process? As long as the matter must eventually be oxidized, why not give it all the oxygen it can stand and as fast as it can be used? Because there are types of bacteria which can not do this destructive work in the presence of oxygen. Human beings do not thrive in the presence of carbon dioxide or ammonia. A hot, sultry day is depressing whereas a cold, clear day is exhilarating. The hot sultry day is to the human being what an excess of oxygen is to these particular bacteria. Consequently, it behooves us to make their surroundings conducive to their best efforts.

To be sure, oxygen must be supplied to this broken down organic matter, but this must be delayed until the bacterial laborers have finished their work on it and have brought it to the stage where the finishing

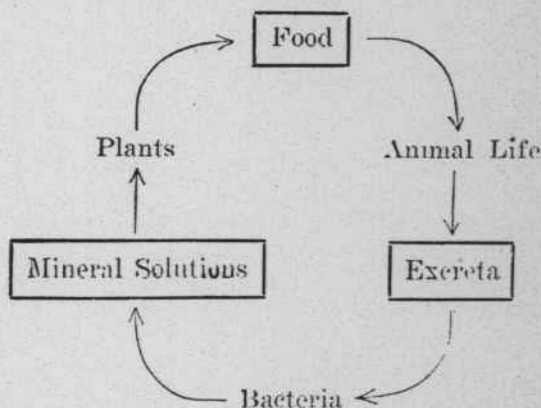
touches can be applied. Emphasis must be laid on the fact that this "breaking down" action of the bacteria means both a physical and a chemical destruction. Coarse matter becomes finally divided, and complex chemical substances become changed into many elementary ones.

After the oxygen in solution unites with the simplest organic material, the oxygen in combination with other elements, such as nitrates, sulphates, etc., is loosened to unite with matters that will gasify and leave the liquid, as carbon dioxide and carbon monoxide.

When the available oxygen has been practically eliminated from the liquid, then a septic or putrid condition exists.

The danger of an overseptic condition must be warned against. Much better is it to shorten the digesting period rather than prolong it. In a tank where the bottom deposit is constantly washed by the incoming sewage and toxic or poisonous substances thereby prevented from accumulating, a semi-septic stage is most satisfactory, as a number of destructive bacteria which require some oxygen can also labor here to advantage.

Consequently, the scum formed by the lighter suspended matter rising to the surface is not necessary to the successful septic tank and actually becomes a source of trouble by growing large enough to materially decrease the capacity of the tank.



The ideal condition exists when the inorganic matter only is deposited in the bottom of the tank and the finely divided organic matter is constantly passing out in the effluent. Shorter storage periods will accomplish this result and accumulating sediment is thereby reduced to a minimum.

To better understand the changes undergone by organic matter in its decomposition and the part played by bacteria, reference may be made to the diagram representing the "cycle" of "organic matter."

Man and other animals eat food and convert it into excreta, a much less complex condition. Bacteria eat this excreta as their food and make it over into mineral solutions. Plants feed upon this mineral

matter and thereby build up their own body tissue, which becomes food for animals.

Thus animals, bacteria, and plants mutually assist each other in their struggle for existence.

If animal life were eliminated from the earth, bacteria would have a difficult time in finding easily digested food. Untouched by man, horse, earthworm, etc., plant life would be coarse fare for bacteria. Eliminating bacterial life would be fatal, however, as plants are absolutely unable to live upon animal-food or excreta. Their nourishment must of necessity be in a mineral form. Now, if we suppose the earth to be deprived of all plant life, then animals would have to live on each other which would soon result in a speedy depopulation of animal life beginning with the smaller and weaker forms.

The septic tank, then, is a destructive furnace or a disintegrator. It demolishes complex organic matter making it into simpler chemical substances. It has a mechanical action in converting bulky matter into a finely divided state and partially into solution. It kills out some of the disease germs that enter.

If successfully operated, therefore, a septic tank makes sewage less obnoxious to look upon. On the other hand, it intensifies the smell and has little effect on the germs.

Obviously the septic tank is not a complete process in itself. It is, however, a good preparatory school. Its products are crude and unfinished but promising. Additional training meets receptive ground and progress is rapid.

To run a septic effluent of considerable volume into a small stream would befoul the stream and enormously increase its bacterial content. Added to a large stream, the effluent would undoubtedly find sufficient dissolved oxygen in the water to subdue its odor, but even here with great dilution, the disease germs are being added to the water in large numbers, and communities so doing are menacing the health of others below who come in contact with the waters of the stream.

Septic sewage taxes the oxidizing power of a stream more than an equal amount of untreated sewage because of the rapidity of its union with oxygen. Unless the stream is well supplied with oxygen, this sudden severe drain will exhaust the oxygen present. Crude sewage requires as much oxygen eventually but because of its less decomposed state it does not take it up so readily. Particles of crude sewage may be carried along for twenty hours before uniting with oxygen. Septic sewage would more likely combine with oxygen in the first half hour of its passage.

Besides disposal into a body of water not used for domestic purposes, there are two other courses open for the final disposal of the effluent. It may be applied either to agricultural land or to an artificial filter bed.

If the fertilizing value of the effluent is to be made use of, then vegetables and fruits for human consumption must not be grown on the land for fear of contamination by disease germs. Nut trees and fodder can probably receive the effluent with impunity. Truck gardens

may be fertilized, however, by subsoil drains properly laid within a foot or so of the surface of the ground.

If the effluent is small in quantity a filter bed of coarse material is out of the question because of the necessity for a continuous flow. A loose, sandy soil is the only recourse for the small disposal system. Here the intermittent flow is advantageous, and, in fact, necessary.

Filtration through two or three feet of sand very satisfactorily completes the purification problem. The unstable, odorous and germ laden septic effluent is here oxidized, made presentable to the most fastidious sense of smell, and largely robbed of its bacterial wealth.

STATISTICS

SMALLPOX.

Reported cases of smallpox in Florida, August, by counties (240 vaccine points distributed):

Alachua	9
Brevard	1
Dade	9
Duval	3
Escambia	3
Lee	3
Putnam	1

Total cases, August	29
Total cases to September 1 (1913).....	1,069

RABIES.

Report of Rabies in Florida, August, 1913, by counties:

	<i>No. persons treated.</i>
Duval	5
Hillsboro	1
Total number persons treated.....	6
Total number persons treated to September 1 (1913)....	91
Deaths from hydrophobia, August (Jacksonville).....	1
Total deaths from hydrophobia to September 1 (1913)..<	3

GLANDERS.

Report of outbreaks by counties, August, 1913:

Duval	7
Seminole	1
Total number of cases.....	8
Total number of cases to September 1 (1913).....	42

HOG CHOLERA (*Distribution of Serum*).

Amount hog cholera serum distributed, August.....	47,750 c. c.
Amount hog cholera serum reported administered by Agents, August...	21,650 c. c.
Number hogs reported treated, August.....	922
Total weight hogs treated, pounds.....	62,300

TICK ERADICATION.

Counties visited by Tick Eradication Agents of the State Board of Health, August: Sewanee, St. Johns.

Cattle dipping vats constructed, August (by counties):

St. Johns	1
Total number vats built to September 1.....	21

SPECIMEN EXAMINATION, BACTERIOLOGICAL LABORATORIES.

	Jacksonville.	Tampa.	Pensacola.	Total.
Animal Parasites	200	156	47	403
Diphtheria	179	42	40	261
Gonorrhea	32	52	28	112
Malaria	199	208	55	462
Pathological	9	5	3	17
Rabid Dogs	10	1	..	11
Tuberculosis	104	66	31	201
Typhoid Fever	174	97	42	313
Water (for Sewage Contamination)....	16	..	3	19
Miscellaneous	28	13	88	129
	951	640	337	1,928

Grand total number specimens examined by State Board of Health Laboratories, August, 1,928.

Specimen Examination, Bacteriological Laboratories (Positive)
August, 1913.

REPORT OF CENTRAL LABORATORY, JACKSONVILLE, FLA.

POSITIVE MALARIALS.

		(Including)		
		<i>Tertian.</i>	<i>Aestivo-Autumnal.</i>	<i>Quartian.</i>
Jacksonville	17	8	..	..
Mandarin	1	..	..	..
Ocala	3	..	1	1
Titusville	1	..	1	..
Greensboro	1	1	..	..
Greenville	1	1	..	..
Tallahassee	1	1	..	..
Daytona	1	..	..	..
Hosford	1	..	1	..
Orlando	1	..	..	..
	28	11	3	1

POSITIVE WIDALS.

(Typhoid Fever.)

Jacksonville	14
Worthington	1
Tallahassee	4
Lulu	1
Dowling Park	2
Lake Butler	2
Holder	1
Wauchula	2
Green Cove Springs	1
Greenville	1
Dade City	1
Delray	1
	31

POSITIVE DIPHTHERIA.

Jacksonville	7
New Smyrna	1
Gainesville	4
Tallahassee	4
Ocala	1
Lake Butler	1
Morristown	1
Bronson	1
Delray	1
DeFuniak Springs	4
Caryville	1

26

POSITIVE TUBERCULOSIS.

Jacksonville	10
Lemon City	1
Welaka	1
Orlando	3
Grandin	1
Tallahassee	1
Kissimmee	1
Miami	1
Leesburg	1
Gainesville	1
Emporia	1
Key West	1
Port St. Joe	1
Dade City	1

25

POSITIVE RABIES.

Jacksonville (including 1 human, 1 cat)	5
Trenton	1

6

PROGRESS OF VITAL STATISTICS IN FLORIDA

The following cities, of 2,000 population and above, are reporting births and deaths to the State Board of Health: Jacksonville, Tampa (with West Tampa), Pensacola, Lake City, St. Petersburg, Ocala, Orlando, Lakeland, Sanford, DeLand, Palatka, Marianna.

The following cities have recently appointed registrars, are now formulating ordinances for collecting reports, and expect to submit birth and death reports to the State Board of Health in the near future: Fernandina, Kissimmee, DeFuniak Springs.

The cities given below have city health departments, and will submit death and birth reports to the State Board of Health soon: Gainesville, St. Augustine, Key West, Miami (now organizing).

The following cities have, upon being interviewed by Assistants to State Health Officer, signified their intention to take the matter of vital statistics up at next council meeting, with a view of submitting reports to the State Board of Health: Live Oak, Plant City, Bartow, Fort Myers, Tarpon Springs.

The following cities yet remain to be visited in the interest of vital statistics: Tallahassee, Quincy, Apalachicola.

The city of Daytona has an ordinance making compulsory the reporting of births and deaths, and the appointment of a registrar is being considered.

A RETORT COURTEOUS

It is not often that newspapers contain such a rich piece of humor, although to the parties concerned it may seem far from it, as that which appeared recently in the *Ithaca* (N. Y.) *News*. This was but another case of domestic infelicity and the story was told in two small advertisements, one appearing a day ahead of the other. They read:

Notice: My wife, Alice Stephens, has left my bed and board without just cause or provocation, and I hereby give notice that I will pay no bills of her contracting. Jas. Stephens, Ithaca, N. Y., dated June 23, 1913.

Notice: I wish to inform the public that the statement of James Stephens of my having left his bed and board is an untruth, he having no bed to leave and I having provided nearly all the board. Mrs. Alice Stephens.—*Miami Metropolis*.

Over 200 persons in Florida have taken anti-rabic treatment through the State Board of Health since January, 1912.

Death rate for Tampa and West Tampa per year per thousand based on report of deaths for July and August, estimating the population at 65,000, would be 14.8.

Three persons taking Pasteur treatment last month were supposedly infected with hydrophobia from a human being.

Fewer cases of smallpox were reported for August than for any month of the current year.

Forty people, in Jacksonville and vicinity, have been bitten by mad dogs so far this year and have taken the Pasteur treatment.

A man living near Jacksonville recently received a small scratch on his hand from the tooth of a dog, but did not take Pasteur treatment. He died from hydrophobia a few weeks later (in August). Another death from hydrophobia occurred in Jacksonville September 13th: this man, also, neglected to take Pasteur treatment.

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Palatka, Fla.

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Pensacola, Fla.

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State Board of Health Building,
Springfield Boulevard,
Jacksonville.

BRANCH LABORATORIES:

State Board of Health Building
Florida Avenue and Constant Street, Tampa.
City Hall, Pensacola.

Sent to any address in the State for the asking.

If you receive it without asking, it means that someone else has requested it for you.

When you change your address drop us a card.

When giving change of address, give both the old and the new.

Anything you want to know about the public health we will try to tell you.

Any information you want about communicable diseases of domestic animals we will help you to get.

Address communications to Jacksonville, Fla.

"The registration of vital statistics is the firm basis on which the whole structure of sanitary science and practice must rest."—Dr. Charles V. Chapin.

COLD WATER BATHS.

Some one asks every now and then: "What about cold bathing? Are cold baths healthful or harmful?" That depends on the individual. If, after a cold plunge or bath a glow comes out on the skin and a comfortable feeling of heat follows the "drying off," then the cold bath has done good. If, on the other hand a shivering feeling comes after the cold bath and instead of a pink glow all over the body, a blueness and "goose flesh" is a sequence, then the cold bath is harmful and should be avoided—never taken. Thus individual peculiarities must govern a habit or a taste, whatever it may be called—of this kind. A cold bath or plunge only does good when there is an exhilarating effect following the act. It is positively dangerous otherwise. Another question to answer. Why dangerous? Because of the shock to the system and the depressing action on the organ of circulation, the heart. A sudden shock may through a paralyzing action arrest the heart's action—a nervous phenomena but a fatal one nevertheless, and when the heart stops beating we all know what follows.

* * * * *

But to those who can, without danger and injury, indulge in cold bathing, there is a most delightful sensation after coming out of the tub. The skin fairly tingles with the red blood coursing rapidly through the capillaries and little arterioles, and it is said by those used to this luxury, that the effect is similar to champagne without the unpleasant head symptoms of a "cold bottle."

Cold bathing daily, of the neck and shoulders, renders a person less liable to "take cold" and drafts of air usually thought to be so dangerous pass over without damage to health. To answer this query, Why? Because, from daily accustom to cold, the nerve filaments of the skin are not so acutely sensitive to cold air or to cold in any form and do not exert that constrictive action on the smaller capillaries of the skin, producing a congestion of the interior with a marked diminution of blood pressure on the surface of the body. It is only when there is a lack of equilibrium between the blood pressure of the surface and immediately below the surface, under the skin, that the danger of "taking cold" threatens.

WHAT IS A DOG WORTH?

Which is worth more, a man or a dog?

Perhaps some dogs are more valuable than some men—that is a matter of opinion—but on the basis of general averages, what is the answer?

At the risk of wearing holes in a subject already threadbare, the State Board of Health is again calling attention to the existence of rabies in Florida, and particularly in Duval County. The significance of the repetition is emphasized by the recent death of a human being in Jacksonville, the third within the past six months, and the second within one month from this disease.

Is there any basis for estimating the dollar value of a human being? The courts have fixed it in individual cases high in the thousands of dollars. But, place the average per annum earning capacity of men at nine hundred dollars; that is six per cent on fifteen thousand dollars. Twelve hundred dollars is six per cent on twenty thousand dollars. Whatever the probable earning capacity may be, the commercial value of the average adult male, the most productive of any class of the human race, would vary somewhere between these figures. Some are worth vastly more; some, by this standard, are worthless.

What dog has an actual commercial—not a sentimental—value of twenty thousand dollars?

Reverting again to averages, the actual worth—again, not the sentimental worth—of a dog is about what his hide would bring in the markets, and fifty cents might be an overestimate. And yet every community, particularly every rural section, harbors or permits the existence of a lot of fifty cent dogs as a continuous menace to the life of every twenty thousand dollar man in the neighborhood, and when the authorities make a consistent effort to protect human life, public sentiment protests against and nullifies such effort.

There are few public health measures which have met with as persistent opposition as have the efforts aimed at the eradication of rabies. There is no disease that causes greater agony than this. There is no disease that is more easily preventable, when the people of the community will allow the health authorities to prevent it. Only two simple measures are necessary—a license tax which is actually enforced, and a muzzling ordinance.

There are some things that the people of Florida may have free, without even asking for them. Hydrophobia is one, and from the official reports it would appear that Floridians not only want, but actually crave this dread affliction. And this somewhat peculiar attitude has been, in some instances, fostered by the newspapers of Florida, which have led public sentiment in its opposition to dog muzzling laws and their strict enforcement. Florida probably is no worse and no better than other Southern States in this respect.

What has hydrophobia cost the State of Florida in the last ten years? Nineteen human lives, thirteen of them in the last two years.

As to the money cost, the figures are not so easily obtainable, but it is known that the cost in Duval County alone has been more than fifteen thousand dollars in the past thirty months, in the loss of horses, mules, valuable high-bred dogs and other domestic animals. This amount would be largely increased if similar statistics were available from other parts of the State.

There is another feature of this financial expense to the State. Through its Board of Health, Florida provides the Pasteur treatment for hydrophobia patients. It furnished this treatment for one hundred and fifteen such patients in 1911; for one hundred and fourteen in 1912, and for fifty-three in the first four months of the present year. The State began this service in 1908, and to the first day of May, 1913, it had paid from its funds nearly ten thousand dollars in this way—\$9,675.00 to be exact. And not one cent of this amount has come back to these funds. Other expenses connected with this treatment more than doubled the amount, and so it is safe to say that each of the three hundred and eighty-four dogs which caused this danger, cost the State close to fifty dollars, a hundred times more than their value by the most liberal estimates.

It is not the high-bred, valuable hunting dogs that are to be feared as a source of rabies, if the community will take care of the worthless cur that hasn't even a sentimental value. If any section can be rid of the homeless, wandering mongrel, the disease may be controlled or wiped out. But it must be remembered that any dog with this infection is always a menace, whether its value be a hundred dollars or a hundred cents. And the animal which is kept about the house or in the kennel is the more dangerous because of its closer and more constant association with human beings.

There can be no doubt that Florida, more easily than any other State, might be rid of this disease. It could eradicate it. England used to have it, but the persistent enforcement of effective muzzling laws brought about its banishment, and equally effective quarantine has kept it out. Australia never has known the disease, because its government profited by the experience of other countries and never permitted the infection to come in. Once Florida had eliminated the disease, it could keep it out more easily than any other commonwealth, for it can guard its coast borders more effectively, and it has comparatively small land border in addition to protect.

To secure efficient service in this direction, the enactment of dog muzzling laws is necessary, whether by municipal, county or State authorities, but the enforcement of such laws should be transferred to local or State health authorities. Those who are charged with the protection of the public health enforce the laws under which they act with a nearer approach to absolute impartiality than do political officials, whose duty often involves the enforcement of ordinances that are contrary to public sentiment. Health boards act with less regard to such sentiment. They speak with a stronger appeal to this same public sentiment, because there is a rather general belief that they have substantial reasons for what they say and do.

These same health boards are given authority for energetic and sometimes drastic action in protecting the community against the invasion of yellow fever, smallpox and other infections. The death rate in a number of yellow fever epidemics has been close to ten per cent of the cases of infection; in smallpox it is smaller, perhaps almost negligible,

but the records show that the usual and natural death rate from rabies among human beings is sixteen in each one hundred cases. The Pasteur treatment has actually reduced this rate to one in each one hundred. But it remains a disease with fatal possibilities; it is a menace to human life and happiness. Municipal control of this situation, with rare exceptions, has proved a farce.

What is Florida going to do about it?—*Press Service State Board of Health.*

ADVICE REGARDING COLLECTION OF BLOOD SPECIMENS FOR MALARIA.

Dr. Henry Hanson, senior bacteriologist of the State Board of Health, in submitting his report of the operations of the Central Laboratory at Jacksonville, makes some pertinent remarks in regard to blood specimens sent for examination, which the doctors and public in general of Florida will do well to note and to follow the advice given:

One of the difficulties encountered in rendering a satisfactory service to the people of the State is largely in the examination of specimens of blood for malaria. It is almost a daily occurrence to receive specimens from cases where quinine has been administered in palliating doses. The difficulty in finding the plasmodium in cases where small doses of quinine have been administered is very great indeed and can only be appreciated by a person who has spent years in a public health laboratory in a subtropical country of this kind. As a rule we do not find parasites in these cases. I have often wondered what the remedy might be in instances of this kind and have concluded that we probably can not entirely eliminate the difficulty.

The tendency in this section of the country is for everyone to take quinine as soon as one feels at all badly. The people in general, throughout the State, will take varying amounts of the many and varied chill tonics which are advertised everywhere and for sale by all drug stores in the State. When these do not clear up the condition, a physician is called and he often administers more quinine. From a large percentage of these cases we get blood smears and our results are naturally negative for malarial parasites. Some of these cases are undoubtedly malaria; many of them are not. In order that there may be more uniform and correct results reached in this line of the work, I trust that we can suggest to the physicians and the public in general, through the medium of HEALTH NOTES, that a little co-operation may very materially aid in correcting the discrepancy between the number of positive and negative reports for malaria. To the patient who feels badly and thinks that he may have malaria I would suggest consulting his physician. Of the physician I would ask that several blood smears be taken, when he first sees the patient, and these be sent to the laboratory. It may be advisable to take one or more thin smears, such as has been our routine practice, and one thick smear. For the thick smear a fair sized drop of blood should be collected and spread out

evenly to cover about from one-half to three-quarters of an inch square on the slide. After these specimens have been secured it is not always practicable or advisable to wait for the laboratory report and in cases where it seems urgent to give the quinine the drug can then be administered and confirmation of the diagnosis be received later.

It is true that a few discrepancies will come up between the clinical and the laboratory diagnosis, but they will be materially less than in the past. Where the clinical diagnosis is not absolutely established as malaria it is advisable to wait for the laboratory report since the administration of quinine in such cases will certainly obscure the course of the disease and put the patient to the annoyance which quinine usually occasions.

SUGGESTIONS TO PHYSICIANS WITH REGARD TO LABORATORY SPECIMENS.

By W. A. Claxton, M. D., Assistant Bacteriologist State Board of Health.

(Read before Duval County Medical Society.)

The intelligent physician of the present day is coming to place more and more dependence in laboratory findings as an aid in the diagnosis of many diseases, and laboratory workers are continually discovering new methods by which certain pathological conditions, which heretofore could only be classified by clinical symptoms, may now be definitely diagnosed by one or more laboratory methods.

The object of this paper is to attempt to point out some of the ways in which the physician can aid in making the examination of the various specimens more satisfactory and thereby make these examinations of more benefit to the physician, the patient and the laboratory worker. This is to be accomplished in two ways:

First. In giving all the information possible about the specimen.

Second. In submitting the specimen in such a way that it is most easily given a fair and complete examination in the laboratory.

I will now take up the specimens received in the laboratory and try to outline the correct manner of submitting them and also point out some of the mistakes which so often come under our notice.

In the first place, it is best to use always the correct blanks for the various kinds of specimens, as in that way there is not the extra work of copying the data from one blank to another. There are always plenty of blanks and containers to be had for the asking, and the average physician is generally not too busy to fill these out. Besides, the questions asked on one blank apply to that particular disease and the information that a patient has or has not had ground itch, or has or has not lived outside of Florida, while of statistical value in regard to feces work is not an important piece of information when a specimen of sputum is submitted, while the duration of the disease in tuberculosis is rather a desirable thing to know.

Taking up the specimens submitted for diagnosis separately we will first consider *malaria*.

In this laboratory we prefer the blood taken in the thin smear. When a thick smear is sent in it should always be accompanied by an even thin smear. The best way to make these is to take a small drop on a clean slide about half an inch from the end. Then, placing the end of another slide in this, allow the blood to spread along the edge of the end of the slide by capillary action; next holding the slides at an angle of forty-five degrees to each other, push the second slide towards the other end of the horizontal slide. This has the advantage of giving a thin, even smear and does not tend to cause the white cells to be massed at one end of the slide as is the case when the slide is pulled instead of being pushed. By making the angle of the second slide less than forty-five degrees the smear will be thinner and by increasing the angle the smear will be thicker. If the first attempt is not successful the slides may be cleaned with alcohol and dried and a second smear taken. Other methods consist in using a needle or cigarette paper, or a thin piece of rubber or glass tubing. Of these the cigarette paper is easiest and most satisfactory. This consists in using a piece of cigarette paper and spreading the blood by drawing it along the slide and is of value where the specimen is brought in on a piece of glass such as window glass. Another thing to avoid is allowing the slides to be brought together before they have dried. This destroys the desired smooth surface and renders a fair examination impossible. They should be allowed to dry in the air, which takes only a moment if the smears are thin enough, and placed in the containers with the smeared surfaces opposite each other.

Inasmuch as blood for *typhoid* examination often accompanies the smear for *malaria* I will mention that it should be on a separate slide, as having them on the same slide interferes with and delays both examinations and occasionally the blood for the widal test becomes lost or destroyed. Also the blood for the widal test should be in the form of a drop and not spread in a thin smear. Where a glass slide is not available for collecting blood for a widal test a drop may be sent in on a piece of glazed paper.

In regard to *diphtheria* there are some points to be noted. As nearly all cases are diagnosed by culturing the organisms, the swabs should be on wire or, if any other handle is used for the swab, it should be at least four inches long so that the swab may be rubbed on the surface of the medium in the test tube. Also when the specimen is submitted on a swab which is not sterile there is danger of having it contaminated by some organism which will cause an overgrowth and crowd out the *diphtheria* bacilli so that they do not show up on the culture.

While I was preparing this paper a swab came in to be examined for *diphtheria* which was on a piece of wire an inch long in a bottle, which was sent out for hookworm and which contained carbolic acid. What is the use of making a culture for this when we know that the carbolic acid has killed all the bacteria on the swab?

The precaution of having a sterile swab or container for other specimens in which the identity of the organism is to be determined by cultural methods is also very much to be considered. For example, a specimen is sent in from an abscess caused by streptococcus pyogenes. A culture is made and we find staphylococcus bacillus subtilis and bacillus coli or some other organism. The time and labor of examining the specimen are lost and the diagnosis and proper treatment are delayed for two or three days unnecessarily and the physician and laboratory are blamed by the patient.

Regarding *tuberculosis* examinations there has been considerable discussion; one bacteriologist going so far as to say that laboratory examinations of sputum were more of a detriment than a benefit as negative results are obtained from patients who have tuberculosis. This is, perhaps, true, but this danger of getting negative findings on positive specimens could be considerably lessened if all the specimens sent in were fair specimens and contained a sufficient quantity of sputum. We get a considerable number of specimens in which the only way to discover whether or not any sputum is mixed with the disinfectant already in the bottle is to centrifuge the whole thing. The trouble is that when a specimen bottle is left with a patient or handed to him, he expectorates in the bottle without getting any of the purulent matter from the lungs but submits a specimen of mucus and saliva which, of course, does not confirm the physical findings in a case of tuberculosis.

Gonorrhoea. The greatest trouble in making a diagnosis of gonorrhoea is when a specimen is sent in from a female patient; oftentimes the swab or smear is taken from the vagina and the resulting picture under the microscope is a mass of bacteria of seven or eight different kinds and even if there are any diplococci the bacteriologist can not be sure that they are gonococci. The best way to get a satisfactory examination is to take two smears, one from the urethra and one from the cervix uteri with the aid of a speculum. In other words get the specimen from the seat of the infection.

Since there has come to be a standard bacterial content for drinking water the number of specimens sent in for examination has markedly increased and the physician is often asked concerning the advisability of submitting a sample of well water for examination. As a rule Florida well water is exceptionally pure and if collected in the proper manner shows a very low bacterial count. The laboratory is often called upon to make examination of water where there is no necessity for it. There should be some epidemiological reason for the examination of the water before the user of the well is advised to submit a sample for examination.

For a water examination to be of any value whatever it is necessary that it be collected in a sterile bottle with a glass stopper and great care should be taken that the water in the bottle does not come in contact with the fingers of the person collecting the sample. If the sample can not be brought to the laboratory immediately it should be packed in ice as the bacteria will rapidly increase if kept at atmospheric tem-

perature. It is the general rule that samples brought in are brought in ordinary medicine bottles or whisky bottles with cork stoppers not sterilized. Then, of course, it is necessary to take the trouble to collect the water all over again, whereas if the applicant had taken the trouble to inform himself that a specially prepared container could be obtained from the laboratory this time could be saved.

It is a fact that the laboratory often examines specimens of various kinds for physicians when they should be thrown away and another specimen requested because, although these specimens sometimes serve to make a diagnosis, more often a half hour is wasted and the work has to be repeated.

Another condition about which the physician is very often consulted and on whose decision lives often hang is in connection with *rabid dogs* and other animals. The first impulse of the public is to kill the dog before he does harm or more harm, as the case may be. The proper procedure in such cases is to confine the animal and watch his symptoms and not kill him before he develops symptoms of rabies. If an animal is mad he will generally die in three to five days, whereas if he is killed the brain may not show negri bodies as these are not always to be found in the early stages of the disease and if they are not found and the dog has bitten someone, animal inoculation has to be resorted to. It takes from two to six weeks to develop the disease in a rabbit, so the haste in killing the dog causes loss of time in diagnosis of the condition. Also it often happens that a dog's head is sent in in which decomposition has begun in the brain and this, by destroying the nerve cells, makes diagnosis doubtful or very difficult to confirm, which emphasizes the necessity of *packing the head in ice*.

Urinalysis. Although urinalyses are no longer made in the laboratory as routine work we sometimes have requests for analysis to detect special conditions. In this connection the most important consideration is a clean receptacle which should really be sterile. A sample may be sent in and by the time it reaches the laboratory it has become full of bacteria, and although these bacteria may have come from the urinary tract there is no way of knowing this as they more often multiply in the bottle. One physician took the precaution to use formaldehyde as a preservative, when he requested an examination, which would require cultures of the sample.

Regarding spirochetes, the essential point in the examination for these is to make the smear of the serum without being mixed with blood cells as these make the examination unsatisfactory.

Dysentery. It is very difficult to distinguish the amoeba of dysentery unless they can be observed while moving or, in other words, unless they are alive. Because of this no antiseptic should be added when a portion of feces is to be examined for amoeba, and the earlier the specimen reaches the laboratory the better. The ideal way to collect a sample is by means of a rectal tube which will allow the mucus to be collected without the feces and, if possible, this should reach the laboratory while still warm.

With regard to specimens to be examined for bacillus of dysentery and typhoid, as these can have no disinfectant in them special containers which comply with the United States mail regulations should be sent for.

As it is unlawful to send specimens of feces for cholera through the mails, under any circumstances, this should not be attempted but the Board of Health applied to, when an official will be sent to the case or the specimen can be personally conveyed to the laboratory.

The last point I will mention is with regard to *pathological* specimens. To save time in the examination of these they should be submitted in about 70 per cent alcohol as this saves one stage in their preparation for final sectioning, whereas if the specimen is sent in formaldehyde no time is saved.

SHOWING HOW HOUSE FLIES BREED.

With the idea of ultimately gaining the co-operation of the public in ridding Key West of natural breeding places of the fly, and the resultant elimination to a great extent of the flies themselves. Dr. J. Y. Porter, Jr., assistant to the State Health Officer with headquarters in Key West, is endeavoring to educate the people of that city along the lines given in a recent report, which follows:

Relative to the fly exhibit maintained in the front of this office, I have the honor to report as follows:

It occurred to me several weeks ago that a practical demonstration showing how flies breed, what they breed in, etc., would be an excellent thing to bring the fly question before the public, excite an interest in the subject, and finally to gain their co-operation towards getting rid of the fly's natural breeding places.

Accordingly, flyblown manure is collected and placed into suitable glass jars, and placed on display in front of the office. On each side are the fly posters of the State Board of Health, in English and Spanish. There is also a short paper giving the life history of the fly.

It has been found necessary to place these jars on a bench with the bench legs in cans of kerosene, otherwise the ants will attack and destroy the fly larvae.

As a rule there are three jars on display, one having manure containing a large number of maggots, one with the fly puparia, and the third having adult flies. All jars are covered on top with mosquito netting.

At first when a great deal of interest was manifested, it was my custom to station the sanitary patrolman on the porch and have him give a short talk on flies. In this way, people who could not read or would not take the trouble, got the essentials in an easy way.

In addition to the exhibit shown on the office porch, another one has been maintained at the drug store of Mr. Thomas Otto, where I understand it has attracted a great deal of attention.

A short time after the adult fly comes out it dies. An attempt was made to keep them alive by feeding, but without success, thus showing

that the house fly does not do well in captivity. Therefore, it has been necessary at all times to maintain more jars than are shown on the porch, to replace the ones that go bad.

WHY BLAME PROVIDENCE?

How long will it be before the usual resolutions of condolence, which now begin "Whereas, it has pleased our Heavenly Father to remove from our midst our beloved Brother or Sister _____ who surrendered this life after a long illness from typhoid fever," shall be changed to read, "Whereas, another case of criminal negligence has occurred in this community, through the death of Mr. or Mrs. _____, resulting from the drinking of water from a polluted public supply. A coroner's jury has affixed the blame on certain careless private parties and some public officials, and recommends they be held for manslaughter. The county attorney has determined such shall not occur again, and will push prosecution."

This is the headline in case of automobile accidents—why not in the latter instance? It's a poor rule that fails to work both ways. Anyhow, why blame the Lord? He has enough charged to him by short-sighted and unthinking mankind.—*Bulletin of the Kansas State Board of Health.*

SOME THOUGHTS ON CHILD HYGIENE.

In dealing with the question of school children, and what is best for them in the schoolroom, as well as their training at home, there is a much mooted question that, as present day sanitarians, it seems we should touch upon, at least. That is, the knowledge of the functions of the different organs of the body with particular reference to those of sex.

Rosenau, in his recent publication, "*Preventive Medicine and Hygiene*," says: "Superficial information is not true education. On the other hand it is a mistake to dwell unduly upon the subject * * *. There is nothing truer than this statement, for unless the subject is handled with the greatest delicacy, the childish mind is too likely to become morbid, and the desired result is defeated.

Teach the children that the body is the sacred temple of the soul, and therefore must be kept clean and sweet and wholesome, to keep the soul, and mind and heart pure as God intended them to be kept. When they ask questions, answer them truthfully, but explain that these are matters which they should not discuss too freely; and teach them of the beauty of life as exemplified in the lives of the birds, and flowers. Do not force these issues on them, in mistaken zeal to follow the present day teachings. The present day tendency is to go to the extreme in these matters, and if it was a mistake in the past generation to keep the children in ignorance of the great question of life, then, in this age, the pendulum is swinging too far in the opposite direction, and the education in this line is being overdone. Moderation is a blessed thing,

and this applies to matters of this kind, as well as to other human affairs.

It is a question if the modern method of handling this great subject is not in a way, responsible for the shocking lack of modesty, yes, and I will say, morality, of the present generation. One of the charms of youth is modesty, and who can say the modern girl is overburdened with this virtue when she will appear in the apparel that is the fashion of the day, and seems to take a genuine pleasure in arousing comment? Is it not true that there is too little reserve displayed? The children should have self-knowledge, yes, but this knowledge should be imparted by the parents, and the outside discussion dispensed with. As a nation we are considered extremists, and this trait is shown up in the avidity with which we grasp every opportunity to display our "up-to-dateness" in all questions of the day.

Common sense is a blessing from the gods, and if common sense is just given a chance to control this matter of sex education of the children, there is no danger of going too far and producing a race of morbid, introspective and worldly wise children.

On the other hand, when common sense is given a chance there is no danger that the child will be kept in ignorance of these vital facts to the extent of endangering his future health and happiness.

Then, by all means, let the children receive this information, but let it come from the parents, and be tempered with common sense, so that the little minds will continue to have the normal, happy and healthful thoughts of childhood.—*L. B.*

STATISTICS.

SMALLPOX.

Reported cases of smallpox in Florida, September, by counties (172 vaccine points distributed):

Duval	4
Escambia	3
Hillsboro	1
Total cases, September.....	8
Total cases to October 1 (1913).....	1,077

RABIES.

Report of rabies in Florida, September, by counties:

	<i>No. persons treated.</i>
Duval	3
St. Johns	1
Total number persons treated, September.....	4
Total number persons treated to October 1 (1913).....	95
Deaths from hydrophobia, September.....	1
Total deaths from hydrophobia to October 1 (1913)....	4

GLANDERS.

Report of outbreaks by counties, September, 1913:

Duval	8
Total number cases to October 1 (1913).....	50

HOG CHOLERA (*Distribution of Serum*)

Amount hog cholera serum distributed, September	41,750 c. c.
Amount hog cholera serum reported administered by agents, Sept. 17, 1910 c. c.	17,910 c. c.
Number hogs reported treated, September	888
Total weight hogs treated, pounds	83,850

TICK ERADICATION.

Counties visited by Tick Eradication Agents of the State Board of Health, September: St. Johns, DeSoto, Hillsboro, Lake.

Counties in which clubs were formed during September: St. Johns.

Cattle dipping vats constructed during September (by counties):

Putnam	1
Total number vats built to October 1	22

SPECIMEN EXAMINATION, BACTERIOLOGICAL LABORATORIES.

	Jacksonville.	Tampa.	Pensacola.	Total.
Animal parasites	191	167	53	411
Diphtheria	421	143	324	888
Gonorrhoea	40	44	31	115
Malaria	259	464	44	767
Pathological	4	5	5	14
Rabid dogs	7	..	..	7
Tuberculosis	95	81	33	209
Typhoid fever	159	104	29	292
Water (for sewage contamination)....	10	8	..	18
Miscellaneous	51	16	91	158
	1,237	1,032	610	2,879

Grand total number specimens examined by State Board of Health Laboratories, September, 2,879.

DISTRIBUTION OF DISEASES DIAGNOSED IN SEPTEMBER.

REPORT OF CENTRAL LABORATORY, JACKSONVILLE.

	<i>Diph.</i>	<i>Typhoid.</i>	<i>Hook.</i>	<i>T. B.</i>	<i>MALARIA</i>		<i>Unde-</i>
					<i>Tertian.</i>	<i>Aestivo.</i>	<i>terminated</i>
Jacksonville	8	7	15	5	6	1	5
Sarasota .....	..	..	1	..	..	..	..
Gainesville	13	1	..	3	..	..	..
Welborn .....	..	..	1	..	..	..	..
Tallahassee	1	2	1	..	4	..	2
White Springs .....	..	..	1	..	..	..	..
DeFuniak Springs.....	4	..	..	..	..	..	..
Bradentown .....	..	..	1	..	..	..	..
Greenville	1	..	1	..	..	..	..
Sneads .....	..	..	1	..	..	..	..
Marianna	3	..	..	..	..	..	..
Wauchula .....	..	..	1	..	..	..	..
Sanford	1	..	13	1	..	..	..
Havana .....	..	..	1	..	..	..	..
Lake Butler	1	1	..	..	..	1	..
Okeechobee .....	..	..	3	..	..	..	..
Greensboro	1	..	1	..	..	..	..
Palatka .....	..	..	1	..	..	..	..
Wildwood	2	..	..	..	..	..	..
Hampton .....	..	..	1	..	..	..	1
Christiana	2	..	..	..	..	..	..
Worthington .....	..	..	1	..	..	..	..
St. Augustine	1	..	..	..	..	..	..
Carried forward...	38	11	44	9	10	2	8

Brought forward..	38	11	44	9	10	2	8
Micanopy .....	..	..	3	2	1	..	1
Palmetto	1	..	..	..	..	..	..
Altha .....	..	..	2	..	..	..	..
Apalachicola	1	..	..	..	..	..	..
Leesburg .....	..	..	2	..	..	..	..
Orlando	4	..	2	3	1	1	1
DeLand .....	..	..	1	..	1	..	..
Dowling Park	1	..	..	..	..	..	..
Umatilla .....	..	..	1	..	..	..	..
Live Oak	1	..	..	1	..	..	..
Archer .....	..	..	2	..	..	..	..
Palm Beach	1	..	..	..	..	..	..
Bronson .....	..	..	3	..	..	..	..
Brooker	1	..	..	..	..	..	..
Hilliard	1	..	..	..	..	..	..
San Antonio	1	..	..	..	..	..	..
Myrtle	1	..	..	..	..	..	..
Starke	1	..	..	..	1	..	..
Green Cove Springs...	1	..	..	..	..	..	..
Mayo	1	..	..	..	..	..	..
Titusville	1	..	2	..	3	..	1
Miami .....	..	..	..	1	..	..	..
Alachua .....	..	..	..	2	..	..	..
Jefferson, Tenn. ....	..	..	..	1	..	..	..
Daytona .....	..	..	..	1	..	..	..
Fort Pierce .....	..	..	1	1	..	..	..
St. Petersburg .....	..	..	6	1	..	..	..
Emporia .....	..	..	..	1	..	..	..
Bushnell .....	..	..	..	1	..	..	..
New Smyrna .....	..	..	7	1	..	..	..
Tampa .....	..	..	..	1	..	..	..
Manatee .....	..	..	..	1	..	..	..
Bartow .....	..	..	2	2	1	..	..
Blichton .....	..	..	..	1	..	..	..
Crescent City .....	..	..	..	..	3	..	1
Arcadia .....	..	..	..	..	..	..	1
Total.....	40	26	78	30	21	3	13

REPORT OF TAMPA LABORATORY.

	<i>Diphtheria.</i>	<i>Typhoid.</i>	<i>Hook- worm.</i>	<i>Tuber- culosis.</i>	<i>Malaria.</i>
Tampa	19	7	11	23	21
Plant City	4	..	..	..	1
Sarasota	2	..	..	..	..
Oneco	1	..	..	..	..
Port Tampa	3	..	..	1	..
Youmans	1	..	..	..	..
Picnic	1	..	..	..	..
Lakeland	6	..	..	..	..
Brewster .....	..	1	..	..	..
Errit .....	..	1	..	..	..
Largo .....	..	..	3	..	..
Dover .....	..	..	2	..	..
Green Springs .....	..	..	1	..	..
West Tampa .....	..	..	..	4	..
Fort Myers .....	..	..	..	1	..
Palmetto .....	..	..	..	1	..
Total.....	37	9	17	30	22

REPORT OF PENSACOLA LABORATORY.

	<i>Diphtheria.</i>	<i>Typhoid.</i>	<i>Hook-worm.</i>	<i>Tuber-culosis.</i>	<i>Malaria.</i>
Pensacola	14	1	4	7	6
Marianna	1	..	..	..	..
DeFuniak Springs	12	..	3	..	..
Millville	1	..	..	1	..
Panama City	1	..	..	..	..
Freeport	1	..	..	..	..
Caryville	1	..	..	..	..
Bonifay	1	..	..	..	..
Hosford .....	..	..	1	..	..
Sneads .....	..	..	3	..	..
Campbellton .....	..	..	2	..	..
	32	1	12	8	6

Total cases of diseases diagnosed by Laboratories of the State Board of Health during September:

	<i>Diphtheria.</i>	<i>Typhoid.</i>	<i>Hook-worm.</i>	<i>Tuber-culosis.</i>	<i>Malaria.</i>
Central Laboratory	40	26	78	30	37
Tampa Laboratory	37	9	17	30	22
Pensacola Laboratory	32	1	12	8	6
Total for State.....	109	36	107	68	65

VITAL STATISTICS EXTENSION IN THE UNITED STATES.

The following abstract is taken from "Physicians' Pocket Reference" of the Bureau of the Census:

Beginning with the seventh census (1850) an effort was made to collect statistics of deaths through the enumerators of population as a part of the general census. This method was unsuccessful in giving reliable results—vital statistics can not be obtained by enumeration but only by immediate registration—but the plan was pursued at each subsequent census until the thirteenth (1910), when it was dispensed with entirely.

In 1880 the results of registration of deaths under State and municipal authority were utilized, thus establishing the registration area. This consisted of only two States, Massachusetts and New Jersey, the District of Columbia, and certain registration cities in non-registration States. The aggregate population represented was 8,538,366, or 17.0 per cent. of the total population of continental United States.

For 1900 there were added the States of Connecticut, Delaware (not entitled to admission and dropped at the next census), New Hampshire, New York, Rhode Island, and Vermont, which increased the percentage to 31.4.

For the census year 1900 (ending May 31), there were added Maine and Michigan, raising the percentage to 37.9.

The compilations theretofore made were only for census years, there being no data for the intercensal period. Beginning with the calendar year 1900, and since the establishment of the Bureau of the Census up-

on a permanent basis, there have been regular annual reports (Mortality Statistics, 1900 to 1911) and large additions to the registration area due to the constant efforts made by the bureau in co-operation with medical and sanitary organizations and with State authorities.

Indiana was added for the calendar year 1900.

California, Colorado, Maryland, Pennsylvania and South Dakota (dropped in 1910) were added for 1906; Washington and Wisconsin were added for 1908; Ohio for 1909; Minnesota, Montana and Utah for 1910; and Kentucky and Missouri for 1911. The aggregate estimated population for the last year was 59,275,977, or 63.1 per cent of the total estimated population of continental United States. The vast number of 839,284 deaths was returned for the latter year, so that although the United States does not possess a complete system of death registration, it does possess returns of great value from the twenty-two registration States, not including North Carolina from which returns are received from all municipalities of 1,000 population and over under State law, District of Columbia, and 38 registration cities in nonregistration States now constituting the registration area.

The fundamental importance of accurate vital statistics for the protection of human health and life is universally recognized, and greater attention is being given to the subject throughout the country. Especially is there widespread interest in the South, which has heretofore been entirely unrepresented by reliable State registration—to its large sanitary and financial loss, because vague rumors of high mortality can only be confuted by accurate registration of deaths.

PUPPY DOG NO RELATION.

In the Island City of Key West there lives a three-year-old youngster, who is kin to the State Board of Health. He attends kindergarten, but his grammar is woeful. The other day the new kindergarten teacher said to him, "J. Y., have you any little brothers or sisters?" His answer was: "I ain't got nothing but a puppy dog and he ain't no relation," and the reply broke up the conversation.

The Palatka News, of October 10th, quoted the following:

"Who for the public has no better use
Than to smear clean walks with tobacco juice,
Expecting others to clean his muss,
Can be justly termed a 'dirty cuss'."

It is estimated that each man, woman and child in Florida pays 10 cents a year for the State Board of Health—we believe that the service is worth a hundred dollars a year to every man, woman and child and a thousand to every town. Therefore, the State Board of Health furnishes the proof that when properly managed the cost of living may be made ridiculously and even wickedly cheap.—*Florida Times-Union*.

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I find the gayest castles in the air that were ever piled far better for comfort and for use than the dungeons in the air that are daily dug and caverned out by grumbling, discontented people. A man should make life and nature happier to us, or he had better never been born.—Ralph Waldo Emerson.

WOOLEN UNDERWEAR

The question is frequently asked, "Should a person in Florida use woollen underwear? Is it healthful and is it needed?" The answer to this query depends altogether upon three things—first, is woollen underwear uncomfortable; secondly, does it produce an irritation (which inquiry may be said to be embraced in the first question), and thirdly, does the action of wool upon the skin cause a hyper-secretion of the skin glands producing too great perspiration?

There can be no doubt but that certain individuals whose surface circulation is sluggish get comfort from light texture of wool in summer with a corresponding heavier weight and quality in winter. In this class of persons there seems to be naturally a lowered action of the sympathetic nervous system; that organization of the body in its anatomical division which supply controls the blood vessels—makes them dilate and contract, and also regulates the functions of many internal organs. Blushing, for an example, is but the action of the sympathetic nervous system through emotion upon the blood vessels of the cheeks. A deviation from normal health by chilling will, through the influence of this system, so constrict the blood-vessels that the temperature of the body is lowered to positive discomfort and has to be raised by artificial means before the individual feels normal again. As in cold water bathing: if the skin reacts quickly after a cold plunge, by a warm glow which should appear, showing an active circulation of the small blood vessels of the surface, then the cold bath does the participant good, is healthful, stimulating and invigorating; otherwise not; and so it is in the employment of flannels for underwear, both in summer and winter. Their use is healthful and contributes to comfort so long as the skin is not kept in a too active state of elimination by undue warmth, but the minute that this does occur, then wool next to the skin becomes discomforting and perhaps an injury, because an over activity of the skin follicles takes place and renders the person susceptible to chilling of the body if exposed to a change in outside temperature. "A check of perspiration" as a cause of "taking cold" is an old saying which has almost passed into an adage, and this chilling of the body driving the blood from the surface to the interior organs, to congest and engorge them, is responsible in a great many instances for the nasal and bronchial disturbances of both winter and summer, for we all have experienced the seeming paradox of "summer colds."

Every one should be a law unto himself or herself as regards underwear. No two people experience the same degree of comfort or discomfort in textures, either in quality or weight. Whatever is comfortable, whatever keeps one in a condition of sufficient warmth in winter or coolness in summer, is the correct and healthy texture to wear whether of wool, cotton, or linen mesh.

REPORT OF SENIOR BACTERIOLOGIST CONTAINING SUGGESTIONS TO PHYSICIANS.

DIPHTHERIA.

The report for the month of October shows an unusually large number of specimens submitted for examination. The bulk of these examinations has been of swabs taken from school children in the city of Jacksonville. In all we have had twenty-five new cases of diphtheria in the city and seventy-eight positives from release and carrier cases. Out of a total of 1,737 cultures we found 148 positive; of these positives 103 were for Jacksonville, leaving forty-five positive examinations for sixteen other towns in the State, apparently indicating that diphtheria outside of this city was of minor importance. This, however, is not true, because the City Board of Health ordinance here requires that each case shall have two negative release cultures before quarantine is raised. This gives us an increased number of positive and negative examinations for this city which we do not get for other cities in the State where there is no ordinance requiring two negative cultures before releasing patients who have had diphtheria. In many places it seems that they do not make any effort whatsoever to determine whether or not persons who have had diphtheria are free from organisms at the time they are released. This is not a very satisfactory condition because many such persons will be released from quarantine while they still harbor virulent organisms in their throats and are the source of a spread of the contagion. I am not speaking of such persons in the sense of ordinary carriers now, but of persons who have actually had the disease. I believe it is proper to advise the physicians generally throughout the State to make greater efforts to secure negative cultures before releasing their patients. Many submit a specimen for diagnosis and when a positive report is obtained give antitoxin which relieves the patient of the symptoms, but we know, from repeated experience, that the antitoxin administration does not always destroy the organisms in the throat and if such individuals are released from quarantine as soon as the membrane has disappeared and as soon as actual clinical symptoms have abated, they can still be a very prolific source of infection for others. I would, therefore, suggest that the Health Officer, through the medium of HEALTH NOTES, urge upon the physicians to observe greater care in releasing diphtheria patients and to submit more specimens from such patients for release. *Those who have been in the habit of making their diagnosis simply on the clinical symptoms and the absence or presence of a membrane should begin submitting specimens both for diagnosis and release.* I do not mean to say here that they should always wait for the report on the first diagnosis culture before giving antitoxin because there are times when the symptoms are so definite and the toxemia so great that antitoxin should be given at the earliest possible moment. They can have the satisfaction of a confirmation of this diagnosis from the laboratory and reports can be wired if so desired. While most cases which show a

membrane are diphtheria we know that there are some cases which simply have a pseudo membrane and are not diphtheria. Such clear up either with or without antitoxin and the administration of antitoxin under the circumstances is both a financial loss to the patient and makes it unsafe for such an individual to have antitoxin or other horse serum therapy at a later date. These cases are not many, but they nevertheless occur and I mention them, and probably emphasize them, here because in the past few years I have found that there are times when such occurrences can be avoided if the physicians will only consult the laboratory in the matter.

PATHOLOGICAL TISSUES.

I also wish to recommend that the doctors who use the laboratories of the State Board of Health for making microscopical diagnosis of tissues removed at operation observe a little more care in sending such tissues for examination. We receive specimens frequently in anything but the proper container and medium. Some send in crushed pieces of tissue between two slides; others send in a piece of dried up tissue in a piece of paper or gauze, and very few specimens are accompanied by data which is of any importance from the laboratory standpoint. If a physician wishes a microscopical diagnosis on a tumor he should send in the entire piece of tissue or tumor removed at operation when the pathologist may have the privilege of examining the entire specimen and selecting the portion for microscopic examination which promises to give the desired information; for instance, a breast or a uterus may harbor a malignant growth and yet if the specimen is not properly selected the microscope will not show the malignant condition. Pathological tissues should be submitted in 70 per cent alcohol and should be accompanied by full detailed information in regard to the location of the tumor or diseased condition, whichever it may be, and giving symptoms and duration of illness, stating specifically what organ the said specimen is taken from or is a part of. We do not especially desire the physician's clinical diagnosis as that does not in any way affect our own diagnosis. It is very important, however, that we should have certain information in regard to these pathological conditions in order that all the evidence may be properly weighed, which, if done, very materially aids in arriving at a correct diagnosis in the case. We also wish to urge that physicians who use the laboratory for this purpose take the time to fill out the blanks which we send them. We shall be obliged to take the position that if these specimens are not of sufficient importance to the sender for him to fill out the blank to the best of his ability they are not sufficiently important for us to give our time in making diagnosis. We do not wish to be understood as unwilling to make such examinations or doing our best to obtain correct results.

RABIES.

The rabies situation among animals has been rather quiet until the latter part of the month when we had a squirrel and a fox submitted for examination. We found suggestive bodies in both of these ani-

mals, but neither one was sufficiently definite for a positive diagnosis and we have accordingly made animal inoculations. We have had the unpleasant experience, however, of having another man die with hydrophobia. This man was bitten some five or six weeks before the symptoms appeared. The dog was killed without sending the same to the laboratory. The man, a patient of Dr. George Walter, of this city, was seen by me on the first day of his active symptoms. The most pronounced feature of the case was the throat symptoms, difficulty in speech and some gastrointestinal disturbances. This is the third successive case where men have been bitten, none of whom have taken the Pasteur treatment, and all three have died with definite symptoms of hydrophobia. I have examined the brains of two of these three and found definite Negri bodies in both. It is remarkable that after all the preaching and persuasion which has come from the State Board of Health and others in this vicinity that individuals who are bitten by dogs do not at least take the precaution to consult some of the health officials in such matters. A more detailed report will be made of this last case at a later date.

SPECIMEN EXAMINATION.

The other examinations for the month have been of the ordinary routine nature and do not call for special comment. The total number of specimens examined in the Central Laboratory is 2,688. The Tampa Laboratory examined 832 specimens, and Pensacola reports 540, making a total of 4,060 for the month of October. The accompanying list of distribution of diseases as diagnosed shows that the Central Laboratory made positive diagnosis for fifty-six different points in the State with a total of 302 of such diseased conditions of communicable nature. This report does not include rabies or pathological specimens or other of the miscellaneous unclassified.

RAT PROOFING OF MUNICIPAL SEWER SYSTEMS.

A report of the investigation to find a practical method of rat-proofing the sewer system of San Francisco, by Dr. Friench Simpson, Passed Assistant Surgeon, United States Public Health Service, outlines certain modifications to catch basins as an effective method of eliminating and controlling rats in sewers.

Complete report by Dr. Simpson containing cost and specifications for the reconstruction of old-type basins, and specifications and original cost of the modern type catch basin, may be had by applying to Surgeon-General, Public Health Service, Washington, D. C. This report appeared in October 31 issue of *Public Health Reports*.

Dr. Simpson points out that the city sewer may be considered a permanent harboring place for rats, providing, in addition, a conven-

ient and extensive highway for their rapid travel from one point of the city to another; that, to a considerable extent, rats enter and follow this highway in their migrations from house to house; and that the rat-proofing of city sewers would not only reduce danger of spread of disease by rats, but would reduce the number of rats infesting such premises and prove an important element for their general control and final elimination.

"MOVIES" WILL SHOW FAKE CONSUMPTION CURE EVIL.

How thousands of consumptives lose their lives annually by taking fake cures for tuberculosis, will be depicted in a motion picture film which has just been produced by Thomas A. Edison, in co-operation with the National Association for the Study and Prevention of Tuberculosis. The film is entitled "The Price of Human Lives," and will be placed on exhibition in theatres throughout the United States on December 2. It has been designed to further the Red Cross Christmas Seal sale and the general anti-tuberculosis campaign.

The story of the picture centers about the wealthy proprietor of a drug concern named Gregory Cort and his daughter Beth. In the earlier scenes of the play a striking contrast between the lavishly furnished Cort home and the dingy tenement room of Nellie Linn is given. While Cort and his family live in luxury and happiness, his principal source of income is derived from the sale of a fake consumption cure called "Concure." Neither his daughter nor any of his intimate friends know the exact nature of his business.

Nellie Linn is shown taking "Concure," to cure herself of a "hard cold," while her lover, Ed Grant, goes to a fake consumption cure doctor in answer to a newspaper advertisement. Beth is engaged to a young man by the name of Harry Bruce, whom Cort finally induces to become his advertising manager by showing him the huge profits which he makes in his business. Meanwhile Beth, as a result of her interest in Red Cross Christmas Seals, has enlisted as a social service worker and in this capacity becomes acquainted with Nellie and Ed. She becomes a friend of the family and attempts to urge them to stop taking fake cures for consumption including "Concure." Neither of them pay much heed to her advice until one day Nellie receives a letter telling her that a near relative had just died from tuberculosis, simply because she had delayed proper treatment too long by relying on "Concure." Nellie shows the letter to Beth who declares that it is a crime to allow the manufacture and sale of such false remedies. Burning with indignation, and with the wrapper of the "Concure" bottle in her hand she goes to the office of the company, where she finds to her surprise and sorrow that the business is conducted by her own father and that her affianced husband is the chief promoter of the swindle. She refuses to recognize her lover after this discovery and forgives her father only after he has promised to make full restitution as far as he can to the suffering consumptives whom he has robbed. As part of his

reformation he sends Nellie and Ed to a sanatorium, where they may be cured.

The closing scenes of the story show Gregory Cort as a changed man. Bruce is also seen in a new role, namely, as the friend of the Linn family and also as the manager of the Red Cross Seal campaign. The story closes on Christmas eve of 1913, with the lovers restored to each other, and Ed and Nellie making good progress on the road to recovery.

The National Association for the Study and Prevention of Tuberculosis, 105 East 22d Street, New York, will send, free of charge to anyone, literature on fake consumption "cures" and will be glad to give as much information as possible with reference to particular alleged "cures" for this disease.—*Press Service of the National Association for the Study and Prevention of Tuberculosis.*

COLDS.

Now look out for colds!

This advice, as a paraphrase of the old time almanac editor's warnings, is particularly timely at this season, although no one knows why the name was given to that condition of sneezing, wheezing and general miserableness that we wrongly associate with the cooler seasons of the year. It is a fact that colds are more prevalent in the colder months, but it is due only indirectly to lower temperatures, because at these seasons we close the doors and windows, shut out more than in summer the free circulation of fresh air, and breathe too much an atmosphere which is vitiated by being depleted of oxygen.

Most of us cherish the idea that a sudden draft of chilling air is the cause of a cold. More than likely this is but a coincidence. The doctors have concluded that this affliction is infectious, that it may be carried from one person to another by a germ, and it is often noted that when one member of the family has a cold, the others are quite likely to "catch" it. That all do not suffer together is due to the fact that some individuals have a power of resistance that makes them immune, at least for the time.

This power of resistance is a wonderful fact in the make-up of human physical economy. To understand what the doctors mean when they talk about it, we must consider the human body as a battle field, whereon from birth until death a continuous fight is being waged between the leucocytes, the police scavengers in the blood, and the germs of all diseases that human flesh is heir to.

These minute protectors of health are the little white cells in the blood. They are described by the microscopists, who have an intimate acquaintance with them, by names too long and difficult for popular use by laymen, but there are several distinct classes of them, each with its special field of usefulness. When danger threatens through the invasion of disease germs, or by external injury which requires the repair of bone or tissue, these little fighters rush to the rescue, they

multiply in numbers and activity, and if they are not overpowered they win the victory, which means that health and normal physical conditions are restored.

Their activity is the measure of this power of resistance, which enables us to ward off disease and to escape infection when it threatens. It is natural that it should be strongest in the adult in the full strength of life, and weakest in the very young and in old age. This is proven by the fact that by far the largest proportion of deaths occur in the two extremes of life, and the smallest in the decades between twenty and fifty.

It is well known that oxygen is a purifying agent, invigorating and strengthening because of its cleansing power. The oxygen from the air breathed into the lungs is carried into the blood where it reaches these leucocytes and strengthens them for their important work. Naturally, also, a lack of oxygen, exhausted from the air by breathing or other means, induces a lack of resisting power. This means that a plentiful supply of fresh, oxygen-laden air brought into the home by perfect ventilation, is the best health preservative known to medical or sanitary science, and it is one of the best cures, too. It is the best preventive of colds that can be found, and it has the advantage of being decidedly cheap.

The germs that cause colds may be carried from one person to another through personal contact or close proximity. They are expelled from the patient by sneezing, violent coughing, in the sputum and in the mucous discharges from the nostrils. To escape catching cold from another person these germs must not be permitted to enter the system, which may be made possible through a too close proximity with the afflicted one.

Colds are more inconvenient and annoying than dangerous. Their greatest danger, however, is in the fact that they predispose the patient to the more serious diseases of the respiratory system, such as catarrh, influenza, diphtheria, bronchitis, pneumonia and some forms of tuberculosis. They are not the cause of these diseases, but neglected they prepare the system for more serious dangers.

Therefore, a cold should not be neglected. The inflammation of the infected membranes should be reduced and the irritation caused by such inflammation should be quieted and normal conditions restored as promptly as possible.

All of us pity our cold-afflicted friends. Most of us have a never failing remedy to recommend and we insist upon its efficacy with some long story about how it has accomplished wonderful cures in cases we have known. And most of us with colds listen to these stories (most interesting to the narrator) with the wish that they had stopped before they were begun. But, let it be remembered that the best cure for a cold is the cheapest of all—deep and frequent inhalations of fresh, oxygen-laden air.—*Press Service State Board of Health.*

NURSES FOR THE PUBLIC HEALTH.

Many Scranton people who have been deeply interested in the splendid work accomplished by our District Nurse Association may not know that there is a national organization for public health nursing which recently held a convention in Atlantic City with 1,000 trained nurses in attendance.

Miss Lillian D. Wald, the president, gave a notable address in which she said: "During the last decade there has been wide propaganda upon public health measures. Perhaps at no time before in the history of the world have there been so many campaigns for instruction concerning health and hygiene and the prevention of illness. To the trained nurse has properly fallen the responsibility of making practical application in the homes of the people of the results of scientific thought and research. So long as nearly 90 per cent of the sick must be cared for, by necessity or choice, in their own homes, just so long will the efforts of the health nurse be required to give this care."

The purpose of our District Nurse Association is not fully appreciated. Probably everyone understands its purely philanthropic side. There are constantly cases of illness among the very poor to which service must be rendered without charge. None suffer quite so much as those whose illness is aggravated by an absence of the common necessities. It frequently happens that the nurses find homes that are fireless and foodless and the children neglected because of the prostration of the mother. Everything is unsanitary, sometimes positively foul. In such instances it is not simply the duty of the nurse to bring comfort and help to the sufferer, but also to organize a campaign of preventive hygiene under the roof. She must keep the disease from spreading, safeguard the innocent and instruct the ignorant; besides giving palliatives and correctives she is expected to be an apostle of health, preaching a gospel of cleanliness, sanity and helpfulness wherever she goes.

But the national organization of Public Health Nursing and our local District Nurse Association both realize that there is another field to which attention should be called. The possibilities of the movement are not confined to charitable cases. Although such work must be done when the need occurs, it should not be extended beyond the line of absolute necessity. There are numberless cases of illness where the family do not wish charity but are unable to employ a trained nurse for an indefinite period at the regular rate of wages. They are able to pay something, perhaps their share of a nurse's time for an occasional visit. But, however small the sum, if it is only sufficient to pay the nurse's car fare, it should be paid by the patient or by the patient's friends. In this way the recipients of such service can preserve themselves from any reproach of being the objects of philanthropy.

We may point out in this connection that many employers, fraternal organizations, insurance companies and municipal authorities are entering into business arrangements with the nursing societies of vari-

ous places to look after the cases in which they are respectively interested. This can be carried still further to the benefit of all concerned. The Scranton school district did all of its work of follow-up and advice in connection with the medical inspection of scholars through the local District Nurse Association, and will continue the policy this year. Scranton is to be congratulated upon being in the forefront of American cities in possessing a very efficient organization to aid in preserving the public health.—*Scranton (Pa.) Tribune-Republican*.

ALWAYS GROWING OLD.

Dr. Woods Hutchinson, in his book "Common Diseases," entertainingly discusses old age conditions that will come to each of us if we live long enough.

"If we are going to do anything to cure the disease of old age, we must begin before birth. Indeed, as Oliver Wendell Holmes wittily remarked in the prevention of disease, 'we must begin with the grandparents.' The so-called senile changes are changes which have been going on ever since we began our individual existence.

"The time when we begin to feel old, the particular period at which we begin to 'show our age,' is merely that period at which these internal changes have reached and shown themselves upon the surface; in which, so to speak, these microscopic alterations have finally become visible to the naked eye.

"It is nothing short of absurd to say that a man becomes old, or senile, or incapable of further development or incapable of the conception of new ideas at, or after, any special or particular age. There is no one period of life in which we grow, and another in which we decline. Both processes are going on side by side in every part of our body from the day we are born. Just as the life of the body means the death of certain of its cells, so the growth of every power and faculty means the sacrifice and the decay of others. Every primitive cell of the embryo lays down part of its life to become a muscle cell, a neurone, a blood corpuscle, or a bone cell.

"The process has no limit, any more than it has beginnings. Life is just that, one-third dying that two-thirds may live, whether it be the single cell, or the hugest and most elaborate body. While in such gross matters as mere avoirdupois and stature, and the actual horsepower of our muscles, we reach a limit, a period of what we are pleased to call maturity, at a comparatively early age; yet, in other and more important respects we continue to grow and develop steadily, to a very much later period, fifty-five, sixty and even seventy years. New and valuable achievements, masterpieces in every realm of human activity and interest, have been produced hundreds of times in every decade, up to and including the ninth.

"It is obvious then that there is no hard and fast 'dead line' which can possibly be drawn, beyond which no further growth, or fresh crea-

tive effort, or new enterprise, or improvement is possible. In fact, by living a healthful, active, happy life, and keeping up all our interests, we can grow and develop and adjust ourselves, and feel that we are growing until we are one day suddenly dead, without ever realizing in any distressing or painful way that we are growing old at all."—*Exchange*.

FOR MAKING SURFACE CLOSETS FLY PROOF.

The NOTES calls the attention of its readers to a very unique and simple device, constructed by Mr. D. C. Covert, of Jacksonville, for the fly-proofing of surface closets. This consists of a metal backboard (as shown) to slide up and be held open by an automatic spring-catch in cleaning out the closet, and is a substitute for the wire screen which is so apt to be torn.



This can be installed at a small cost, and it is believed will fulfill the purpose intended. Any particulars desired in regard to its construction and installation may be had of Mr. Covert. It is not the idea of the NOTES to advertise this device, but the inventor has shown such skill and practical knowledge of the subject that it well merits investigation.

STATISTICS.

SMALLPOX.

Reported cases of smallpox in Florida, October, by counties (636 vaccine points distributed) :

Alachua	13
Bradford	9
Brevard	1
Duval	15
Escambia	1
Hillsborough	3
Pinellas	3
Polk	8
Suwanee	1
Total cases, October.....	54
Deaths, October (Duval Co.).....	1
Total cases to November 1 (1913).....	1,131

RABIES.

Report of rabies in Florida, October, by counties:

	<i>No. persons treated.</i>
Bradford	*2
Walton	1
Total number persons treated, October.....	3
Total number persons treated to November 1 (1913) ..	95
Deaths from hydrophobia, October.....	1
Deaths from hydrophobia to November 1 (1913).....	5

*One treatment cancelled.

GLANDERS.

Report of outbreaks by counties, October, 1913:

Duval	7
Osceola	1
Total number cases.....	8
Total number cases to November 1 (1913).....	58

HOG CHOLERA (*Distribution of Serum*).

Amount hog cholera serum distributed, October	93,750 c. c.
Amount hog cholera serum reported administered by agents, October.....	30,765 c. c.
Number hogs reported treated, October.....	1,224
Total weight hogs treated, pounds.....	96,650

TICK ERADICATION.

Counties visited by Tick Eradication Agents of the State Board of Health, October: St. Johns, Putnam.

Places at which public demonstrations of dipping cattle were held in October: Hollister (Putnam County).

Cattle dipping vats constructed during October (by counties) :

Baker, at Winn.....	1
Lake, at Leesburg.....	1
Seminole, at Sanford.....	1
Holmes, at Bonifay.....	1
Escambia, at Muskogee.....	1
Osceola, at Southport.....	1
Total vats built, October.....	6
Total number vates built to November 1.....	28

SPECIMEN EXAMINATION, BACTERIOLOGICAL LABORATORIES.

	Jacksonville.	Tampa.	Pensacola.	Total.
Animal parasites	187	224	27	438
Diphtheria	1,890	119	282	2,291
Gonorrhoea	38	32	23	93
Malaria	225	245	41	511
Pathological	15	7	4	26
Rabies	*4	...	...	4
Tuberculosis	133	84	28	245
Typhoid fever	160	91	25	276
Water (for sewage contamination)....	7	2	2	11
Miscellaneous	29	28	108	165
	2,688	832	540	4,060
Grand total number specimens examined by State Board of Health Laboratories, October	4,060			

*One squirrel, 1 human, 1 cat, 1 fox.

DISTRIBUTION OF DISEASES DIAGNOSED IN OCTOBER

REPORT OF CENTRAL LABORATORY, JACKSONVILLE.

(— MALARIA —)

Town.	Diphtheria.	Gonorrhoea.	Etiolo- autumnal.	Quartan.	Tertian.	Species not Determined.	Typhoid.	Tuberculosis.	Uncinaria.	Total.
Archer .....	..	..	..	..	..	..	..	..	2	2
Apalachicola	5	..	..	..	..	..	1	..	..	6
Bradentown	3	..	..	..	..	..	..	1	5	9
Bronson .....	..	..	..	..	..	..	..	..	3	3
Bassinger .....	..	..	..	..	..	..	..	..	1	1
Brooksville .....	..	..	..	..	..	..	..	..	1	1
Bartow .....	..	..	..	..	..	..	1	..	1	2
Center Hill .....	..	..	..	..	..	..	..	..	2	2
Cocoa .....	..	..	..	..	..	..	..	1	..	1
Daytona .....	..	..	..	..	..	..	1	..	..	1
Delray	3	..	..	..	..	..	..	..	..	3
DeFuniak Springs....	2	..	..	..	..	..	..	..	..	2
Dowling Park.....	..	..	..	..	..	..	1	..	..	1
Fellsmere .....	..	..	..	..	..	..	..	1	3	4
Fernandina	1	..	..	..	..	..	..	1	..	2
Floral City .....	..	1	..	..	..	..	..	..	..	1
Fort Myers .....	..	..	..	..	..	..	..	..	1	1
Fort Meade .....	..	..	..	..	..	..	1	1	..	2
Fort Pierce .....	..	..	..	..	..	1	..	1	..	2
Gainesville	3	..	1	..	..	..	..	2	1	7
Hawthorn .....	..	..	..	..	..	..	..	..	1	1
Jacksonville (new)...	25	12	..	1	8	5	8	18	14	93
Rl. and Carriers....	78	..	..	..	..	..	..	..	..	78
Leesburg .....	..	..	..	..	..	..	..	1	..	1
Lloyd .....	..	..	..	..	..	..	..	1	..	1
Loughman .....	..	..	..	..	..	..	1	..	..	1
Mayo .....	..	..	..	..	..	..	..	1	..	1
Marianna	9	..	..	..	..	..	..	..	..	9
Carried forward...	128	13	1	1	8	6	13	30	35	238

— MALARIA —

Town.	Diphtheria.	Gonorrhoea.	Estivo- autumnal.	Quartan.	Tertian.	Species not Determined.	Typhoid.	Tuberculosis.	Uncinaria.	Total.
Brought forward ..	128	13	1	1	8	6	13	30	35	238
Mandarin .....	..	..	..	..	..	..	..	..	1	1
McIntosh .....	..	..	..	..	..	..	..	..	4	4
Miami .....	..	..	..	..	..	..	..	1	..	1
Micanopy .....	..	..	..	..	..	..	..	..	1	1
Morristown .....	..	..	..	..	..	..	1	..	..	1
Newberry .....	..	..	..	..	..	..	..	..	1	1
New Smyrna .....	..	..	..	..	..	..	..	..	2	2
Ocala	1	1	..	..	..	..	..	1	..	3
Okeechobee .....	..	..	..	..	..	..	..	..	5	5
Orlando .....	..	1	..	..	1	..	..	1	3	6
Oxford .....	..	..	..	..	..	..	..	..	1	1
Orange Park .....	..	..	..	..	..	..	..	1	..	1
Palmetto	1	..	..	..	..	..	..	..	..	1
Palatka	1	..	..	..	..	..	..	1	..	2
Plant City .....	..	..	1	..	..	..	..	..	..	1
Sanford	3	..	..	..	..	..	..	..	..	3
San Antonio .....	..	..	..	..	..	..	..	..	1	1
St. Augustine	1	..	..	..	..	..	..	1	..	2
St. Petersburg .....	..	..	..	..	..	..	..	..	1	1
Sarasota .....	..	..	..	..	..	..	..	..	1	1
Starke .....	..	..	..	..	..	..	1	..	..	1
Tallahassee	9	..	..	..	..	..	2	2	4	17
Wauchula .....	..	..	..	..	..	..	..	..	1	1
Welborn .....	..	..	..	..	..	..	..	..	2	2
West Palm Beach .....	..	..	..	..	..	..	..	..	1	1
Lake Butler	1	..	..	..	..	..	2	..	..	3
Williston	1	..	..	..	..	..	..	..	..	..
Madison	1	..	..	..	..	..	..	..	..	..
Total	148	15	2	1	9	6	19	38	64	302

REPORT OF TAMPA LABORATORY.

Tampa	13	12	1	..	11	13	11	14	19	94
Nocatee	1	..	..	..	..	..	..	..	..	1
Sarasota	1	..	..	..	..	..	..	..	..	1
West Tampa	1	..	..	..	..	..	..	1	..	2
Youmans	1	..	..	..	..	..	..	..	..	1
Release Cultures	27	..	..	..	..	..	..	..	..	27
Clearwater .....	..	2	..	..	..	..	..	..	..	2
Bradentown .....	..	..	..	..	..	1	..	..	..	1
Arcadia .....	..	..	..	..	..	1	..	..	..	1
Floral City .....	..	..	..	..	..	2	..	..	..	2
Lakeland .....	..	..	..	..	..	2	..	..	..	2
Wauchula .....	..	..	..	..	..	..	1	..	..	1
Plant City .....	..	..	..	..	..	..	1	..	..	1
Fort Myers .....	..	..	..	..	..	..	1	1	..	2
St. Petersburg .....	..	..	..	..	..	..	..	2	1	3
Punta Gordo .....	..	..	..	..	..	..	..	1	..	1
Gardenville .....	..	..	..	..	..	..	..	1	..	1
Chicora .....	..	..	..	..	..	..	..	1	..	1
Kissimmee .....	..	..	..	..	..	..	..	..	1	1
Palmetto .....	..	..	..	..	..	..	..	..	1	1
Total	44	14	1	..	11	19	14	21	22	146

REPORT OF PENSACOLA LABORATORY.

(—MALARIA—)

	<i>Diphtheria.</i>	<i>Gonorrhoea.</i>	<i>Eristo- autumnal.</i>	<i>Quartan.</i>	<i>Tertian.</i>	<i>Species not Determined.</i>	<i>Typhoid.</i>	<i>Tuberculosis.</i>	<i>Uncinaria.</i>	<i>Total.</i>
Pensacola	2	3	..	..	5	..	1	5	2	18
DeFuniak Springs...	5	..	..	..	..	..	..	..	2	7
Apalachicola .....	..	..	..	..	..	..	..	1	..	1
Bonifay	1	..	..	..	..	..	..	..	..	1
Marianna	10	..	..	..	..	..	..	..	..	10
	<hr/> 18	<hr/> 3	<hr/> ..	<hr/> ..	<hr/> 5	<hr/> ..	<hr/> 1	<hr/> 6	<hr/> 4	<hr/> 37

Total cases of principal diseases diagnosed by Laboratories of the State Board of Health during October:

	<i>Diph- theria.</i>	<i>Gonor- rhoea.</i>	<i>Malaria.</i>	<i>Typhoid.</i>	<i>Tuber- culosis.</i>	<i>Hook- worm.</i>
Central Laboratory.....	148	15	18	19	38	64
Tampa Laboratory.....	44	14	31	14	21	22
Pensacola Laboratory...	18	3	5	1	6	4
Total for State.....	<hr/> *210	<hr/> 32	<hr/> 54	<hr/> 34	<hr/> 65	<hr/> 90

*Includes 105 releases and carriers.

"Vital statistics are to the health officer just what symptoms of disease are to a physician. Through the presence of symptoms the physician recognizes disease and studies the effect of his treatment; through vital statistics the health officer recognizes the sick social organism, the sick town, county, or State, and estimates the effect of health administrations by the reduction of death rates.

"The vital phenomena of the social organism, of the public, are its vital statistics. The vital statistics of a community, town, county, or State are the only known means of reaching intelligent conclusions regarding the health thereof."—*Bulletin of the North Carolina State Board of Health.*

"Finally, the proper recording of births and deaths is a matter of the utmost importance to the cause of public health. Modern preventive medicine deals with the mass of mankind. It cannot, under State direction, touch the individual except in the case of certain rare diseases; it reaches him only through the community. The results of public health work, therefore, and its success, depend on accurate information as to the health of the community. But this, in turn, cannot be had without an accurate report of every case of preventable disease, of every birth, of every death. Vital statistics balance the books of life and death; without them, public health work can never audit accounts for better or for worse."—*Virginia Health Bulletin.*

VITAL STATISTICS—REMINDER

This is to remind every city official, doctor and citizen in the few remaining cities of Florida (of 2,000 population and over) which have not yet appointed registrars and provided by ordinance for the reporting of births and deaths, to co-operate and take immediate steps to have their city placed in the Registration Area.

The many cities which have made provision for vital statistics are to be highly commended; it is urged, however, that they continue to work for perfect statistics, and this applies fundamentally to each citizen in individually supporting, and not holding back, mortality reports in his town.

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BRANCH LABORATORIES:

State Board of Health Building,
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City Hall, Pensacola.

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When giving change of address, give both the old and the new.

Anything you want to know about the public health we will try to tell you.

Any information you want about communicable diseases of domestic animals we will help you to get.

Address communications to Jacksonville, Fla.

Through zeal knowledge is gotten, through lack of zeal knowledge is lost: let a man who knows this double path of gain and loss thus place himself that knowledge may grow.—Buddha.

NATURE'S DAILY DEMANDS.

That we are "fearfully and wonderfully made" is a fact self-evident to every human creature of whatsoever degree of intelligence, if only a moment's thought is given to the subject. The "sweet signer of Israel" calls attention to the truth that human life is a vast piece of machinery which Nature—another word for God—has so fashioned and adjusted to the varying needs of man's physical existence, that each particular function of this great human machine may fit in harmoniously with the whole scheme for living. This human "plant" up to a certain number of years, is a perpetual motion agent dependent on supernatural means, unless interrupted abruptly by accident or disease. It is true, that like large "plants" which comprise many and variously constructed devices of machinery, the human machine must have careful attention else the journals will become "too hot" or the "exhaust and discharge pipes" become clogged, and then will interrupt and perhaps permanently disable the other working parts of the internal machinery. The human machine differs in no particular in respect to needed care from that constructed of iron and steel. Both must have attention or both will stop running in a very short while. The "plant" which operates through the aid of steam or electricity is equipped with pumps, valves, exhausts, condensers and discharge pipes. The human machine is likewise provided with a complicated pump, the heart; with vacuum chambers and air circulation. It has a condensing apparatus through the lymphatic system by which the solids when liquified in the great boiler, the stomach, are passed into the digestive canal, absorbed and returned through the circulation pipes, the veins, to the lungs, the large evaporators, in order to have the injurious portions removed before being "turned into" nerve and brawn. The machine devised by Nature differs from the machine constructed by man in that this human machine has several condensers and evaporators especially designed for eliminating worn-out material of different kinds from the nutritive elements which in the complex system of assimilation are required to maintain life.

We know that it is the custom for engineers who look well after the preservation of the boilers in a "plant" to see that they are regularly "blown out." They do this, because of the accumulation of dirt and rust in the boiler tubes; by cleaning out these tubes, the life of the boiler is lengthened and preserved. Therefore, it is highly essential in conserving human health that the exhaust and discharge conduits be kept free and open, so that that which is no longer needed in the economy of living may not remain to pass into the circulation and

poison the general system. The care of the human machine requires precisely the same thought and the same attention as the mechanical device, so that it, too, may last longer and be efficient. Now, we are getting at the gist of this article.

Purposely a comparison in working has been made of the human machine—the physical man—to a machine constructed by man, of iron and steel, to bring home more forcibly and more directly to personal consideration, the necessity of maintaining a daily routine of “habits” if perfect health is desired.

At the risk of offending the hypersensitiveness of some, it is proposed to speak plainly and to say that by “daily habits” is meant that mindfulness of the human machine, which demands that certain functions shall by daily routine methods be kept active and that not even a day be allowed to pass without performing a duty which is demanded of it or them. Do you know what happens if the air or vacuum pump connected with a boiler becomes choked? The steam is used up, and if water is let in suddenly, then what? An explosion. And precisely does this happen with the human when the exhaust and discharge pipes fail to perform their necessary part in “blowing out” refuse material and expelling impurities from the main channels of the human system. A methodical and careful attention to these things will avoid and prevent disasters to the human machine as well as to the steel.

This advice is thought to be more needful to women than to men, because statistics of certain ailments go to show that women, as a rule, are more neglectful, and suffer more from the sequences of disregard of daily habits, than do men. It is a very easy matter to form daily habits of nature's requirements, and when formed the habits “stick,” and are almost automatically performed without much heed being given to the necessity. Before infants can walk, indeed as soon as they can sit up, intelligent and observing mothers will so direct the care of the child that habits required by Nature will form then, and ever afterwards be religiously carried out. Religiously? Yes, because it is a part of religion to keep clean, and no one can be wholly clean whose system is obstructed by cast off particles from digestive processes, and which serve to do and act as poisonous elements when re-absorbed.

Just give this subject a little thought. May be you, who read it, have already done so, but another “think” will do no harm, if considered in connection with the comparison which has been made to the care necessary to preserve machinery constructed by man's intelligence.

IMHOFF TANKS.

BY ALEX. H. TWOMBLY, CIVIL ENGINEER.

The disposal of sewage presents two problems—the disposal of liquids and the disposal of solids. The average sewage contains more than 99.9 per cent water, and less than $\frac{1}{10}$ of one per cent solid matter.

The Imhoff Tank accomplishes two important things. It separates the liquids from the solids and it reduces the solids to a form in which they can be handled safely.

The Imhoff Tank is divided into two compartments, "Typical Section," an upper compartment through which the fresh sewage flows slowly so that the solid matter contained in it which is capable of being settled falls by gravity to the bottom of the upper compartment, and thence by the outlets in its hopper bottom into the lower compartment. The fresh sewage passes through the upper compartment in from one hour and a half to two hours, which time is so short that no septic action takes place and the effluent running away from the Tank has not fermented.

In a settling tank without two compartments, the fermentation of the solid matter which is settled to the bottom soon causes gases to arise, which, passing through the sewage prevent complete settling of the solid matter. In the Imhoff Tank the solid matter settles to the lower compartment and the gases arising from fermentation pass outside of the upper compartment to the atmosphere, thus causing no interference with the settling action in the upper compartment. Results prove that instead of settling the usual 50 to 65 per cent of such solid matter as can be settled, that in the Imhoff Tank the settling reaches 96 to 98 per cent.

The gases which come away from an Imhoff Tank are mainly carbonic acid gas and marsh gas, both of which are odorless. In contrast to this the gases which come off from single shallow tanks are apt to contain large quantities of hydrogen sulphide, which is very offensive.

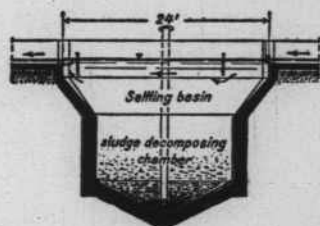
The Imhoff Tank is so constructed that the solids which have been removed from the sewage remain in the lower compartment for three months or longer, at the end of which time the destruction of non-resistant organic matter and germs has been accomplished to such a degree that an odorless sludge can be discharged through the outlet pipe directly from the tank without further purification. At the end of about three months a part of the sludge is removed from the bottom of the tank at frequent intervals, so that the operation of the tank becomes practically continuous, new sludge forming on top of the older sludge and gradually taking the place of the older sludge at the bottom as it is removed.

The disposal of sludge has been the most difficult problem with which to contend, as the sludge usually has a strong odor and is very slimy, causing a nuisance.

The methods of disposing of sludge in general use have been to carry it to sea in barges where possible, to transport it in tram cars

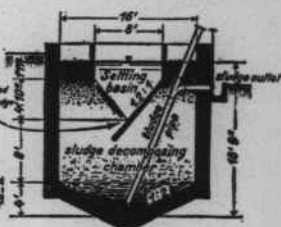
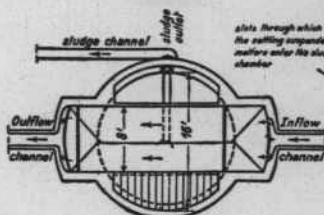
to uninhabited sections and to dump it, after first removing as much water as is possible by sand filtration on drying beds or by filter presses. These methods are more or less productive of odors and nuisance.

SINGLE TANKS WITH HORIZONTAL FLOW

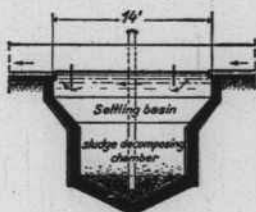


Sewage Settling Tank.

1000 Inhabitants
30,000 U.S.gals. daily
Capacity of settling basin 745cb.ft.
Flowing-through-time 2 hours
(hourly flow assumed $\frac{1}{2}$ of daily flow)
Capacity of sludge-decomposing chamber 1900cb.ft.

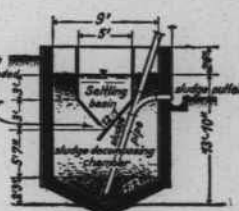
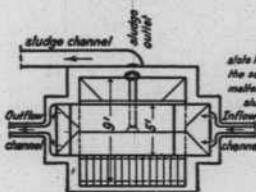


This form of horizontal flow tank is suitable for installation where one or more single tanks are required. Its simplicity of construction and operation often makes it more desirable than the single tank of the radial flow type.

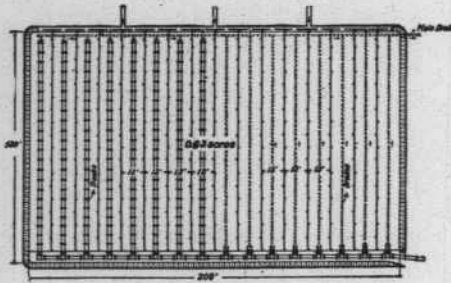


Sewage Settling Tank.

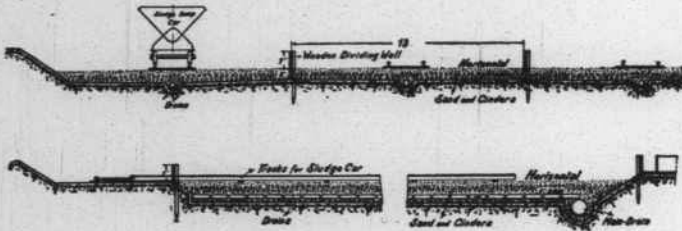
200 Inhabitants
20,000 U.S.gals. daily
Capacity of settling basin 300cb.ft.
Flowing-through-time 2 hours
(hourly flow assumed $\frac{1}{2}$ of daily flow)
Capacity of sludge-decomposing chamber 500cb.ft.



For a small tank, where stresses due to water and earth are not large, a plant of this rectangular form may be found simpler to build.



*Sludge Drying Beds
for
100,000 People.*



The sludge drying beds are divided into sections by wooden partitions in order to aid in the proper distribution of the sludge and allow the whole of the bed to be used to better effect. After lying on the beds from three days to a week the sludge can be removed. A convenient method for this removal is to shovel the sludge into small dump cars running on rails. The rails in the separate sections are connected by means of turn-tables to the main track leading to the sludge dump. Some little of the fine surface sand on the beds is lost during the sludge removal and this should be replaced when necessary.

The sludge from the Imhoff Tank when drawn through the sludge outlet has only a faint odor similar to tar, which disappears in a short time, leaving the sludge with an odor similar to garden soil. The sludge is run directly onto drying beds consisting of about 12 inches of gravel, under-drained, where the sludge rapidly dries. Ordinarily the sludge from other systems requires from six to seven months to dry, but the sludge from the Imhoff Tank on account of the absence of slime and its peculiar consistency dries in from three to ten days, when it can be shoveled into carts or tram cars and dumped upon any waste or fill land without annoyance from odors or danger from fermentation. The amount of sludge is only about one-fifth of that ordinarily obtained, as its destruction has been more complete, and the amount of water contained in the sludge averages about 75 per cent against an ordinary average of 95 per cent in other sludges.

The effluent from the upper compartment can be run directly to sea, or where it is necessary to give it further treatment can be passed over a trickling filter which consists of a bed of stone about six feet deep, under-drained, upon which the effluent is distributed by sprin-

kler heads. This process thoroughly aerates the effluent. In its progress through the stone bed the bacterial action on the surface of the stones assists in rendering the final effluent non-putrescible and stable.

The Imhoff Tank thus accomplishes the separation of the liquids and the solids and reduces the solids to a sludge which is handled without danger or without nuisance from odors.

The liquid effluent from which the solids have been separated is then treated by well established methods, such as the trickling filter or the contact filter, so that it is rendered non-putrescible and stable. This treatment, however, is unnecessary where a sufficient volume of water is moving to oxidize the effluent as it comes from the Imhoff Tank.

TWOMBLY & HENNEY, *Engineers, New York.*

ANAPHYLAXIS.

Dr. Hanson, Senior Bacteriologist of the State Board of Health, explains the term "anaphylaxis" in connection with serum therapy. (Extract from his monthly report, November, 1913, to the State Health Officer) :

"On account of some inquiries which have been made on the following statement—

While most cases which show a membrane are diphtheria we know that there are some cases which simply have a pseudic membrane and are not diphtheria. Such clear up either with or without antitoxin and the administration of antitoxin under the circumstances is both a financial loss to the patient and makes it unsafe for such an individual to have antitoxin or other horse serum therapy at a later date.

I wish to add a word of explanation in regard to this matter. It has been found by very good investigators, such as John F. Anderson, director of the Hygienic Laboratory; Hektoen, of the University of Chicago, and many others who have studied the subject of anaphylaxis, that laboratory animals as well as humans may become sensitized by the administration of foreign serum or proteid. An animal which has been injected with some foreign serum, like horse serum, may after a lapse of a few months be killed by a subsequent injection of the same serum. Humans who have had serum therapy sometimes show a hyper-susceptibility to such serum when injected at a later date. The amount of serum injected originally does not play as important a role as some are inclined to think. The exact changes which take place, or are responsible for this undesirable reaction or this increased susceptibility to the foreign serum have not been satisfactorily explained. Those who are interested in further information on this topic are referred to Adami, "Principals of Pathology," Volume I, p. 559; also, Rosenau & Anderson, U. S. Hygienic Laboratory, Bulletin No. 29, Washington, 1906; Gay & Southard, Journal Medical Research for 1907, p. 114; St. George T. Grinnan, Journal A. M. A.,

Volume 58, p. 178, January number; Hektoen, Journal A. M. A., Volume 58, No. 15, p. 1081.

The articles referred to give a very thorough and complete discussion of the principles of this hyper-susceptibility to serum which is also spoken of as Allergy. A more complete discussion of this can be presented at a later date if you so desire.

I do not mean to in any way discourage the use of antitoxin where one has an undoubted case of diphtheria, or other disease where serum therapy is indicated. The antitoxin itself has absolutely nothing to do with this (serum sickness) anaphylactic reaction. It is the serum as it is changed in the tissues of the person or animal into which it is injected which produces the symptoms. The percentage of such reactions is fortunately very small and it would be a crime for any one to withhold the use of antitoxin in case of diphtheria simply on suspicion that the patient might react badly to the serum.

There are more children dying each year, even in this State, for the lack of use of antitoxin than those who die on account of the serum reaction. Fortunately there is a means of determining whether an individual is hyper-susceptible to the serum which consists of a small quantity of the antitoxin serum being administered and waiting for a few minutes to an hour for the manifestation of the reaction. If no pronounced reaction is obtained within an hour it is usually safe to go ahead and administer the entire dose of the antitoxin. For the person who is to have antitoxin as well as for the person administering it, it is reassuring to know that the individuals showing this hyper-susceptibility to the serum are such as have at some previous time had an injection of a serum of some kind and those who have never had a serum of any kind who show this phenomenon to hyper-susceptibility are so few as to be negligible.

(Respectfully referred to the Commanding Officer of the Florida Militia.)

THE LESSON OF TYPHOID.

Despite the ravages of enteric fever in past wars and the brilliant results which have followed anti-typhoid inoculation, especially in the army and navy, the organized militia, apparently from motives of economy, is slow to learn the lesson. While a few adjutants general of advanced ideas have adopted the suggestions of medical officers and have given their men the advantage of this protection against this most common scourge of armies, others have treated the recommendation with little concern and have replied either that the matter might be deferred, or that the cost of the anti-typhoid serum (about 15 cents per man) was too great a charge on the allotment of the State.

The most recent outbreak of typhoid in a military force gives food for serious reflection. A body of picked militiamen to the number of more than fifty contracted typhoid fever and at least six deaths have occurred. Nowadays we would condemn a man who refused vaccination against smallpox as a man of less than average intelligence, one

who ignored universal experience and upheld his own little narrow ideas. If a man at the present day refused to allow his child suffering from diphtheria to receive the anti-toxin injection, he would be considered almost criminal. What then shall we say to commanders-in-chief, or their executive officers, who to save a few cents per man in their State allotment, or from sheer indifference, allow the troops under their command to be exposed to risk of disease and death which might be prevented by an inexpensive procedure whose success has been proven after exhaustive experimentation both here and abroad, and which the government is willing and anxious to give to its citizen soldiery or organized militia?—(*From the Military Surgeon.*)

THE BUTCHER'S LAMENT.

The meat inspector is mine enemy, I shall not like him.
 He maketh me to shoo out the flies and cover the sausage mill.
 He showeth me the meat I shall sell, and that I shall not.
 Yea, verily tho' I scrub the ice-box twice yearly, he sayeth it is not clean.
 He kicketh if I keep hogs in the back yard and sayeth it is unsanitary.
 He smelleth of my sausage and heaveth it in the slop barrel, even tho' it be but slightly sour.
 He demandeth that I use not the larynx and mammae for sausage.
 And he speaks in harsh tones if I disobey him.
 I bringeth my meat to his office for inspection, wrapped in tree tops.
 He turneth it down and insists that I wrap it in clean, white cloths.
 Yea, verily, tho' mine hog grew up mine own orchard, he condemneth it for cholera, and fly-blows, and I lose twelve dollars and a half.
 He hurls threats at me if I bring not the livers and "lights," and if I am slow about paying my bill at the month's end, he maketh me bring the money at the time of inspection.
 He anoineth my livers with kerosene and insisteth on seeing the hides and ear-marks even tho' I tell him there is none.
 Surely, the words "Clean up and stay clean" will be hurled at me all the days of my life, and I shall live in fear of the inspector for ever and ever. Amen.—*Mulford Vet. Bulletin.*

CARELESSNESS IN DIPHTHERIA.

The NOTES heartily endorses the following from the *Palm Beach Weekly News* of November 21, 1913:

"The office of the Georgia State Board of Health at Atlanta was recently compelled to close by an epidemic of diphtheria among the officers and employees. Ten persons were affected. Only the secretary and one other physician escaped the disease. The secretary of the board is reported to have said that the disease was contracted from specimens which were so carelessly prepared by the physicians who sent them in that no indication was given of what the packages contained. Ordinary envelopes, it is said, were sent in containing portions of membranes placed between pieces of cardboard or paper; other

envelopes contained cotton swabs which fell out when the package was opened. Even if this were not a violation of the postal laws, it is almost inconceivable, says *The Journal of the American Medical Association*, that physicians could be so careless as to send in this manner material as deadly as dynamite or an infernal machine. It not only constituted a danger to the persons in the office of the health board, as the sequel proved, but it was also a menace to every one handling the mail en route. The responsibility of physicians in handling such material is great and the utmost precaution should be observed."

STATISTICS.

SMALLPOX.

Reported cases of smallpox in Florida, November, by counties (1,080 vaccine points distributed):

Alachua	1
Bradford	1
Calhoun	1
Duval	6
Escambia	1
Manatee	2
Pinellas	5

Total cases, November	17
Deaths, November (Duval Co.)	1
Total cases, January 1 to December 1, 1913	1,148
Total deaths reported January 1 to December 1	3

RABIES.

Report of rabies in Florida, November, by counties:

	<i>No. persons treated.</i>
Alachua	1
Duval	3
Levy	2
Orange	1
Suwanee	2

Total number persons treated, November	9
Total number persons treated, January 1 to December 1, 1913	104
Total deaths from hydrophobia, January 1 to December 1, 1913	5

GLANDERS.

Report of outbreaks, by counties, November, 1913:

Duval (in horses)	3
Total number cases, November	3
Total number cases, January 1 to December 1, 1913 (in horses and mules)	61

HOG CHOLERA (*Distribution of Serum*).

Amount hog cholera serum distributed, November	44,750 c. c.
Amount hog cholera serum reported administered, November	12,145 c. c.
Number hogs reported treated, November	552
Total weight hogs reported treated, pounds	42,285

TICK ERADICATION.

Counties visited by Tick Eradication Agents of the State Board of Health, November: Hamilton.

Places at which public demonstrations of dipping cattle were held in November: Winn (Hamilton County).

Cattle dipping vats constructed during November (by counties):

Orange, at Zellwood	1
Gadsden, at State Insane Asylum.....	1
Pasco, at Dade City	1

Total vats built, November..... 3

Total number vats built to December 1..... 31

PUBLICATIONS ISSUED, NOVEMBER.

Supplement to Publication 92, "Rules and Regulations of the State Board of Health, Public Health Statutes, and Powers and Duties."

SPECIMEN EXAMINATION, BACTERIOLOGICAL LABORATORIES.

	Jacksonville.	Tampa.	Pensacola.	Total.
Animal parasites	130	148	20	298
Diphtheria	896	147	96	1,139
Gonorrhoea	43	36	44	123
Malaria	138	249	20	407
Pathological	9	5	1	15
Rabies	11	2	..	13
Tuberculosis	148	69	23	240
Typhoid fever	86	107	14	207
Water (for sewage contamination)....	3	..	..	3
Miscellaneous	24	17	80	121
	1,488	780	298	2,566

Grand total number specimens examined by State Board of Health Laboratories, November 2,566

DISTRIBUTION OF DISEASES DIAGNOSED IN NOVEMBER.

REPORT OF CENTRAL LABORATORY, JACKSONVILLE.

—MALARIA—

Town.	Diphtheria.	Gonorrhoea.	Estivo-autumnal.	Quartan.	Tertian.	Species not Determined	Typhoid.	Tuberculosis.	Uncinari.	Total.
Alachua .....	..	..	..	..	..	..	..	2	2	4
Altha .....	..	..	..	..	..	..	..	..	1	1
Apalachicola	5	..	..	..	..	..	..	..	..	5
Bronson .....	..	..	..	..	..	..	..	..	1	1
Brooker .....	..	..	..	..	..	..	..	..	1	1
Bushnell .....	..	..	..	..	..	..	1	..	..	1
Cedar Key	1	..	..	..	..	..	..	1	..	2
Chattahoochee	1	..	..	..	..	..	..	..	..	1
Christiana .....	..	..	..	..	..	..	..	1	..	1
Cocoa .....	..	..	..	..	..	1	1	..	..	2
Carried forward ..	7	..	..	..	..	1	2	4	5	19

—MALARIA—

Town.	Diphtheria.	Gonorrhoea.	Etiotomum.	Quartan.	Tertian.	Species not Determined.	Typhoid.	Tuberculosis.	Uncinaria.	Total.
Brought forward..	7	..	..	..	..	1	2	4	5	19
Crystal River	2	..	..	..	..	..	..	..	..	2
Daytona .....	..	..	..	..	..	..	2	1	..	3
DeLand .....	..	..	..	..	..	..	..	..	2	2
Dunnellon .....	..	..	1	..	..	..	..	..	..	1
Emporia .....	..	..	..	..	..	..	..	1	..	1
Fernandina	2	..	..	..	..	..	..	..	..	2
Ft. Meade .....	..	..	..	..	..	..	..	1	..	1
Ft. Pierce .....	..	..	..	..	..	..	..	..	1	1
Ft. White .....	..	..	..	..	..	..	..	2	..	2
Gainesville	5	3	1	..	..	1	..	..	..	10
Gaites .....	..	..	..	..	..	..	..	..	1	1
Hawthorne .....	..	..	..	..	..	..	..	..	1	1
Jacksonville	63	19	1	..	..	3	11	16	8	121
Key West .....	..	..	..	..	..	..	..	1	..	1
Lake Butler .....	..	..	..	..	..	..	..	..	1	1
Lakeland	2	..	..	..	..	..	..	..	..	2
Largo .....	..	..	..	..	..	..	..	..	1	1
Laughman .....	..	..	..	..	..	1	..	..	..	1
Leesburg .....	..	..	..	..	..	1	2	..	..	3
Mandarin .....	..	..	..	..	..	..	..	..	1	1
Miami .....	..	..	..	..	..	..	1	1	..	2
Micanopy .....	..	..	..	..	..	..	2	..	1	3
Morristown .....	..	..	..	..	..	..	1	..	..	1
Mulberry .....	..	..	..	..	..	..	..	1	..	1
Newberry .....	..	..	..	..	..	..	..	1	..	1
Ocala .....	..	..	..	..	..	..	..	..	1	1
Oklawaha .....	..	..	..	..	..	..	..	..	1	1
Orlando	2	1	..	..	..	..	..	1	2	6
Otter Creek .....	..	..	..	..	..	1	..	..	..	1
Oviedo .....	..	..	..	..	..	..	..	..	1	1
Palatka .....	..	..	..	..	..	..	..	2	..	2
Palmetto .....	..	..	..	..	..	..	..	1	..	1
Plant City	2	..	..	..	..	..	..	..	..	2
Quincy	1	..	..	..	..	..	..	..	..	1
Romeo .....	..	..	..	..	..	..	..	..	1	1
St. Augustine	2	..	..	..	1	..	..	2	..	5
St. Petersburg .....	..	1	..	..	..	..	..	..	..	1
San Antonio .....	..	..	..	..	..	..	..	..	1	1
Sanford	7	..	..	..	..	..	..	..	..	7
Sarasota .....	..	..	..	..	..	..	..	..	1	1
Sharpe .....	..	..	..	..	..	..	..	..	1	1
Tallahassee	20	..	..	..	1	..	..	1	1	23
Titusville .....	..	..	..	..	..	..	..	..	2	2
Wauchula .....	..	..	..	..	..	..	..	..	2	2
Specimens received										
without data .....	..	..	..	..	..	..	..	..	4	4
Total	115	24	3	..	2	8	21	36	40	249

REPORT OF TAMPA LABORATORY.

— MALARIA —

Town.	Diphtheria.	Gonorrhoea.	Etiotom- autumnal.	Quartan.	Tertian.	Species not Determined.	Typhoid.	Tuberculosis.	Uncinaria.	Total.
Tampa	26	13	1	..	9	5	16	19	13	102
Lakeland	2	..	..	..	1	..	..	2	1	6
Bradentown .....	..	..	..	..	..	2	..	..	..	2
Ft. Myers .....	..	..	..	..	..	..	1	..	..	1
Knights Station .....	..	..	..	..	..	..	1	..	..	1
Dade City .....	..	..	..	..	..	..	1	..	..	1
Plant City	1	..	..	..	..	..	..	..	..	1
Manatee	2	..	..	..	..	..	..	..	..	2
Kathleen .....	..	..	..	..	..	..	..	1	..	1
Sydney .....	..	..	..	..	..	..	..	..	1	1
St. Petersburg .....	..	..	..	..	..	..	..	..	1	1
Tarpon Springs .....	..	1	..	..	..	..	..	..	..	1
Clearwater .....	..	1	..	..	..	..	..	..	..	1
Total	31	15	1	..	10	7	19	22	16	121

REPORT OF PENSACOLA LABORATORY.

Pensacola	16	1	..	..	..	1	6	4	28
DeFuniak Springs .....	..	..	..	..	..	..	..	1	1
Campbellton .....	..	..	..	..	..	..	..	1	1
Bonifay	1	..	..	..	..	..	..	..	1
Marianna	5	..	..	..	..	..	..	..	5
Milton	1	..	..	..	..	..	..	..	1
Holt .....	..	..	..	..	..	1	..	..	1
Tallahassee .....	..	..	..	..	..	..	1	..	1
Millville	2	..	..	..	..	..	..	..	2
Total	9	16	1	..	..	2	7	6	41

Total cases of principal diseases diagnosed by Laboratories of the State Board of Health during November:

	Diph- theria.	Gonor- rhoea.	Malaria.	Typhoid.	Tuber- culosis.	Hook- worm.
Central Laboratory	115	24	13	21	36	40
Tampa Laboratory	31	15	18	19	22	16
Pensacola Laboratory ..	9	16	1	2	7	6
Total for State	155	55	32	42	65	62

VITAL STATISTICS.

PROGRESS.

In the August issue of HEALTH NOTES appeared an article on "Vital Statistics," outlining the plan to collect birth and death reports in the cities of the State of 2,000 population and over. Several numbers since have reported the progress of this plan.

It is gratifying now to be able to report that of the twenty-eight cities (counting Tampa and West Tampa as one), twenty-seven have

appointed Registrars or provided for the collection and return of reports to this office for the ensuing year. These cities, in order of population, are:

Jacksonville,	St. Petersburg,	Daytona,
Tampa and West Tampa,	Ocala,	DeLand,
Pensacola,	Lakeland,	Apalachicola,
Key West,	Orlando,	Plant City,
Gainesville,	Sanford,	Fort Myers,
Miami,	Live Oak,	Bartow,
St. Augustine,	Quincy,	Tarpon Springs,
Tallahassee,	Palatka,	Kissimmee,
Lake City,	Fernandina,	Marianna.

Most of these cities are now reporting and with one exception the balance have arranged to begin January 1st, next. The exception is Fort Myers, which has appointed the Registrar but has not yet passed any ordinance making compulsory the reporting of births and deaths.

DeFuniak Springs, the nineteenth among the above, is the one city from which nothing definite has been heard, but it is understood an ordinance was being prepared, and by this time it may have been passed.

REQUISITES FOR SUCCESS.

The greatest need in this work is the support of public sentiment favoring it as necessary information that each community should accurately know of its health conditions. This both to induce newcomers to settle and to indicate needful sanitary reforms.

It is impossible for a community to induce newcomers to settle unless health is reasonable. Health conditions cannot be proven from local statements. If the necessary accuracy is obtained, claims of healthfulness can be corroborated by these official records.

Without public sentiment to stand back of the ordinances and so help physicians, and make midwives report, Registrars, no matter how faithful, will not be likely to obtain accurate returns.

Those cities which have not passed adequate ordinances or appointed Registrars, should do so at once, and all citizens should loyally support the Registrars and ordinances when appointed and passed and see that the law is fully complied with.

REAL HEROISM.

To live well in the quiet routine of life; to fill a little space because God wills it; to go on cheerfully with a petty round of little duties, little avocations; to smile for the joys of others when the heart is aching—who does this, his works will follow him. He may not be a hero to the world, but he is one of God's heroes.—*Dean Farrar.*

Restaurant Patron (caustically)—I am glad to see your baby has shut up, madam.

Mother—Yes, sir. You are the only thing that's pleased him since he saw the animals eat at the Zoo.—*Puck.*

ANOTHER VIEWPOINT.

The NOTES has so frequently insisted that the injunction, "Thou shalt not kill," applied as much to the indifference of civic authorities to remedy and prevent the occurrence of unsanitary agents destructive to life as it did to the assassin or murderer; therefore it is refreshing to notice in the daily press of the State that there is an awakening to this fact, and that there are editors in Florida who boldly declare that there is more than one way of "killing" than by gun or dirk, and that a failure to protect life, by adopting preventive measures against disease is as criminal an act as when life is destroyed by violence. The NOTES thanks the *Miami Metropolis* for the following most excellent comment on this question of killing:

"THOU SHALT NOT KILL."

Twelve good men and true rendered a verdict of first degree murder in the case of a man accused of killing a neighbor and robbing his house. The day was set for the execution. A few minutes before the prisoner went to the scaffold he confessed his guilt and he was hanged by the neck until he was dead.

The penalty was a deserved one and society had been protected. It is a heinous thing to take a life and rob a home.

The twelve good men and true were "leading citizens" and upon them devolved much of the town's management. In the town were places where flies and mosquitoes were hatched by the million, near the town were dairies where milk was sold from diseased cows and delivered in receptacles unsanitary and germ laden. Every year in this town were numerous deaths from typhoid fever and malaria, there were cases of tuberculosis and cholera infantum, but no one ever thought of having a trial and accusing these twelve good men and true of being responsible for the death of the town's beloved.

In the case of the man who was hanged by his neck until he was dead the demon Greed drove him to the house of the neighbor where a roll of bank notes were known to be—the neighbor undertook to protect his money and was killed.

In the other case, it was still the demon Greed that drove these twelve good men and true to feign blindness to unsanitary conditions. It would have cost money to get rid of the flies and the mosquitoes and to clean up the dairies—no one had ever brought it right home to them that they were murderers in even a more despicable way than was the thief. He did it knowing that the law would probably get him at last—they did it knowing that it was a perfectly protected crime.

And even if you smile at the seemingly ridiculous classification of those twelve good men and true with that common murderer, you can not think with any depth and not agree that the crime of the twelve is more reprehensible than the other.

It is a heinous thing to take a life and rob a home.

appointed Registrars or provided for the collection and return of reports to this office for the ensuing year. These cities, in order of population, are:

Jacksonville,	St. Petersburg,	Daytona,
Tampa and West Tampa,	Ocala,	DeLand,
Pensacola,	Lakeland,	Apalachicola,
Key West,	Orlando,	Plant City,
Gainesville,	Sanford,	Fort Myers,
Miami,	Live Oak,	Bartow,
St. Augustine,	Quincy,	Tarpon Springs,
Tallahassee,	Palatka,	Kissimmee,
Lake City,	Fernandina,	Marianna.

Most of these cities are now reporting and with one exception the balance have arranged to begin January 1st, next. The exception is Fort Myers, which has appointed the Registrar but has not yet passed any ordinance making compulsory the reporting of births and deaths.

DeFuniak Springs, the nineteenth among the above, is the one city from which nothing definite has been heard, but it is understood an ordinance was being prepared, and by this time it may have been passed.

REQUISITES FOR SUCCESS.

The greatest need in this work is the support of public sentiment favoring it as necessary information that each community should accurately know of its health conditions. This both to induce newcomers to settle and to indicate needful sanitary reforms.

It is impossible for a community to induce newcomers to settle unless health is reasonable. Health conditions cannot be proven from local statements. If the necessary accuracy is obtained, claims of healthfulness can be corroborated by these official records.

Without public sentiment to stand back of the ordinances and so help physicians, and make midwives report, Registrars, no matter how faithful, will not be likely to obtain accurate returns.

Those cities which have not passed adequate ordinances or appointed Registrars, should do so at once, and all citizens should loyally support the Registrars and ordinances when appointed and passed and see that the law is fully complied with.

REAL HEROISM.

To live well in the quiet routine of life; to fill a little space because God wills it; to go on cheerfully with a petty round of little duties, little avocations; to smile for the joys of others when the heart is aching—who does this, his works will follow him. He may not be a hero to the world, but he is one of God's heroes.—*Dean Farrar.*

Restaurant Patron (caustically)—I am glad to see your baby has shut up, madam.

Mother—Yes, sir. You are the only thing that's pleased him since he saw the animals eat at the Zoo.—*Puck.*

ANOTHER VIEWPOINT.

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REGISTRARS OF VITAL STATISTICS.

WILL PLEASE NOT FAIL

- To send in reports promptly.
- To have all certificates legibly written in unfading ink.
- To have every item possible answered; if information cannot be had, answer "Unknown."
- To sign every certificate as Registrar, with date of filing.
- To copy each birth and death certificate in local register the day certificate is filed.
- To have place of birth or death stated definitely, showing whether it occurred within city limits.
- To require date of birth or death.
- To have all birth certificates specify whether "born alive" or "still-born."
- To require both a birth and a death certificate for stillbirths.
- To have midwives or others unable to write, sign certificates with their marks.
- To require statement of sex.
- To require statement of color or race.
- To require statement as to whether legitimate, or born out of marriage.
- To require a certificate of birth for each child born in case of plural births, specifying order of birth for each.
- To have stated in birth certificates number of children born to mother and number now living.
- To require the maiden name of mother, not the name after marriage.
- To require informant's signature and address on every death certificate.
- To require the approximate age, when the exact age is unknown.
- To have doctors properly assign cause of death, and avoid Undesirable Terms.
- To require signature and address of undertaker, or the person acting as such.
- To have a sufficient number of blanks on hand at all times.
- To require any person who has neglected to file a birth or death certificate to do so immediately.
- To enforce your ordinance when it is wilfully violated.
- To number birth and death certificates consecutively, those that occur on or after January 1, 1914, in a new series, beginning with Number 1 for the first birth and the first death.
- To make out bills in duplicate.

—Acknowledgments to Mississippi Health Bulletin.

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